ASSESSMENT ON OUTCOME OF GOOSEBERRY JUICE WITH HONEY ON THE LEVEL OF HAEMOGLOBIN AMONG IRON DEFICIECNY ANEMIC ADOLESCENT GIRLS AGED (18-23 YEARS)

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A QUASI EXPERIMENTAL STUDY TO ASSESS THE OUTCOME OF GOOSEBERRY JUICE WITH HONEY ON THE LEVEL OF HAEMOGLOBIN AMONG IRON DEFICENCY ANEMIC ADOLESCDENT GIRLS AGED (18-23 YEARS) AT A SELECTED SETTING, KAKINADA, 2011-2012

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ABSTRACT

ABSTRACT

Anemia is a medical condition in which the red blood cell count or haemoglobin is less than the normal. The normal level of haemoglobin is generally different in males and females. For men, anemia is typically defined as haemoglobin level of less than 13.5 gram/100ml and in women as haemoglobin level less than 12.0 gram/100 ml. These definitions may vary slightly depending upon the source and the laboratory reference model.

Any process that can disrupt the normal life span of a red blood cell may cause anemia. Normal life span of a red blood cell is typically around 120 days. Red blood cells are made in the bone marrow. Anemia is caused essentially through two basic pathways. Anemia is either caused: by a decrease in production of red blood cell or haemoglobin, or by a loss or destruction of blood.

A study was conducted to assess the outcome of gooseberry juice on the level of haemoglobin among iron deficiency anemic adolescent girls in selected hostel. Kakinada, during 2011- 2012.The objective of the study was to compare the outcome of gooseberry juice on the level of haemoglobin.

The study was conducted by adopting quasi experimental research design. 60 adolescent girls who have fulfilled the inclusion criteria were selected by non – probability purposive sampling technique. The hypothesis formulated stated that there was a significant difference in the level of haemoglobin among adolescent girls who receives intervention and who does not.

The conceptual framework adopted was based on Roy's adoption model. In experimental group, gooseberry juice was given and pretest and post test level of haemoglobin was obtained by sahli hemometer. In the control group without the intervention, the pre and post test level of

haemoglobin was obtained. Analysis revealed that the adolescent girls in the experimental group showed increased level of haemoglobin at highly significant level at $p<0.001$ when compared with the control group.

Administration of gooseberry juice among adolescent girls enhances the level of haemoglobin. Therefore, gooseberry juice can be used as an effective measure, which helps to improve the haemoglobin and thus prevent anemia.

CHAPTER- I

INTRODUCTION

"The adolescent girl still remains a young plant that neither gets light or water, she remains the flower that could have blossomed but didn't".

Service to the youth in the community is a further continuation of school health service. The adolescent period is a time of rapid physical growth as muscle mass, weight and height. These physical changes means increased requirements related to nutritional needs. In girls especially adolescent girls require more attention on their nutrition.

The world health organization (WHO) estimates that anemia affects over 2 billion people worldwide. Anemia is a general term referring to the condition characterized by abnormally low levels of healthy red blood cells or haemoglobin. There are multiple causes of anemia including genetic and dietary factors. Regarding dietary causes of anemia, however, deficiencies of folic acid, B12, and vitamin C can also lead to low levels of haemoglobin.

These data reflect anemia as measured by haemoglobin status, of which the WHO estimates that 50% are caused by iron deficiency anemia. Women, particularly pregnant women, and children are most at risk of anemia worldwide, and the WHO suggest that 52% of pregnant women, 42.3% of women, and 48% of children are anemic in developing countries. Anemia caused by dietary factors is a disease that is readily preventable and treatable.

Iron intake should be increased to meet normally expanding blood volume and and to replace iron lost through menstruation. Gooseberry helps to absorb the Iron cells. The juice of gooseberry strengthens the body's power of resistance and has proved to be an excellent remedy for anemia.

Gooseberry juice contains high amounts of Vitamin C (ascorbic acid), Nicotinic Acid, Vitamin B-1, Iron, and Calcium -- gooseberry juice remains a popular tonic consumed across the

globe. 81.2% of gooseberry fruit is water, thus it is a very good source of skin moisturizing, providing effective beauty remedies. Furthermore 8.3% of it is Glucose. The juice has also got adequate amounts of Fibers, Carbohydrates and Proteins.

Nutrients derived from natural sources in organic form are much easier to assimilate than synthetic nutrients. The iron in gooseberry juice, in particular, is noted for being much more easily assimilated than man-made forms of iron.

BACKGROUND OF THE STUDY

Adolescence is the period when the individual can be shaped and molded into great adults psychologically. The sense of identity and crisis of intimacy and isolation increases as adolescent progress towards young adulthood and move from dependency to the beginning of independence. Metamorphic ally adolescents change their behavior patterns and values as well. The rates of change in attitude, interest are seen as parallel to the rate of physical change in the growth and development of an adolescent, The emotional disturbance might lead them to react to frustration through maladjusted behavior, The behavior displayed by children were more in schools and colleges. (Lalitha , 1999).

Global data base by WHO (2007) on child growth and malnutrition and National family health survey - 2 (2007) in India, had suggested that adolescent girls of urban, semi urban and rural schools in India are found to be anemic and the prevalence rate of 61.9% to 82.1%percentage, being highest among rural girls of higher order as compared to urban poor girls irrespective of their age and monarchial status. This could be due to differences in dietary habits, worm infestations, poor hygiene, and poor environmental sanitation.

India is one of the fastest growing youth populations in the world with an estimated 190 million adolescents of which 22% are girls. The Govt. of Tamil Nadu directorate of public health and preventive medicine (2002) conducted a study on prevalence of anemia among adolescent girls. The study report shared that 65.6% in the in the rural and 85% of adolescent girls in the urban were anemic. Directorate of public health reports stated that 3.44% of school adolescents are anemic out of which 59% of them are receiving iron & folic acid tablets.

Anemia is one of the most widespread public health problems, especially in developing countries like India and has important health and welfare, social and economic consequences. These include repaired cognitive development, reduced physical work and in severe cases, increased risk of mortality particularly during the prenatal period. There is also evidence that anemia may result in reduced growth and increased morbidity. Given the magnitude of the problem, greater efforts are needed to develop and implement programs both to prevent and to control anemia. Park (1998) suggested that iron deficiency anemia is a major nutritional problem in India and in many other developing countries 20-40% of natural deaths are due to anemia during pregnancy.

Stoltzfus (2003) considered iron deficiency to be one of most prevalent forms of malnutrition, yet there has been a lack of consensus about the nature and magnitude of the health consequences of iron deficiency in population. The public health importance of iron deficiency anemia (IDA) which was made as part of the global burden of disease (GBD) 2000 project. Iron deficiency is consider to contribute to death and disability & also through its direct contributions to cognitive impairment, decreased work productivity, and death from severe anemia based on meta –analysis of observational studies, mortality risk estimates as the decreased risk in mortality for each 1g/dl increase in mean haemoglobin concentration. On average, globally, 50% of the anemia is assumed to be attributable to iron deficiency Globally iron deficiency ranks number among 26 risk factors included in the GBD 2000, and accounts for 841,000 deaths and 35,057,000 disability–adjusted life. There is an urgent need to develop effective and sustainable interventions to control iron-deficiency anemia.

The bioavailability of iron can be enhanced by positive dietary habits & reduce the intake of inhibitors and enhance iron absorption through vitamin C and vitamin A rich fruits & vegetables (Yegammai & A. Swarnalatha,2003).

In India the existing prevalence studies were carried out mostly in northern states. Agarwal had documented that the prevalence of anemia was 46% in premenarcheal girls as compared to 48% in post menarcheal girls in the urban shams of north east Delhi. In rural India a survey was

conducted among 13 to 19 years old girls & found out anemia prevalence rate of 83% among girls in school & 93% among girls not in school (Agarwal, 1998).

The study conducted by Rajarathanam Jolly et al., 2000 in TamilNadu has demonstrated anemia among the rural teenage girls is same as the other parts of the country. The prevalence of anemia was 45% with severe anemia being 2% moderate anemia 6% & mild anemia 37%.The prevalence of anemia was 41% in premenarcheal girls as compared to 45% post-menarcheal girls

Iron deficiency anemia is a major nutritional problem of both developed & developing countries. 4.5 billion people (66.80) of the world's population may be iron deficient 2 billion people over 30% of the world's population are anemic. The incidence of anemia is highest among women and young children varying between 60% to 70 %. (Yegammai and Swarnalatha, 2003).

Dietary iron exists in two form Heme iron found in haemoglobin, myoglobin & some enzymes. Heme iron is found not only in plant foods but also in some animal food. The absorption of heme iron is affected only affected only minimally by the compositions of food media & gastrointestinal secretions. But non-heme iron absorption is affected by other compounds in food that inhibits or enhances its absorption, Phytate, tamins which are polyphenols in tea inhibits where as presence of calcium helps to improve iron absorption.

One of the major problem affecting adolescent girls is anemia, a familiar nutritional problem to be concentrated more to improve their health and quality of life. Since they are going to be the future homemakers.

SIGINIFICANCE AND NEED FOR THE STUDY

Anemia is the most common form of malnutrition among adolescents today. It is of public health significance in our country. Adolescents (10-19 years) constitute >20% of our population in India & 50% suffer from iron deficiency anemia. Both urban & rural, suffer from anemia & being more in girls than boys. Poor economical status, faulty dietary pattern, lack of

awareness & education, urbanization prevalence of malaria, hookworm & other infestations, repeated bacterial infections also influence the incidence & nature of anemia among growing children and adolescents.

Iron deficiency anemia reduces the work capacity of individuals and entire population bringing serious economic consequences and it may be obstacle to national development. Also iron deficiency anemia is one of the leading causes for morbidity. Iron deficiency has effect on all systems in the human bodies. Long standing severe anemic may lead to congestive cardiac failure.

The adverse effect of iron deficiency anemia differs according to the age group. Example in case of pregnancy it can cause hemorrhage and shock. So thereby increase the risk of maternal and infant mortality. In case of school going children the concentration and intellectual skills are affected.

Numerous morbidity studies among school children have been carried out by individual researches mostly in urban areas of India. The incidence of malnutrition including anemia is 40-70%.Giving health education for prevention of preventable problems and development of healthy living practices, among students, which is one of the recommendations of the school Health Committee (Narayana 2001).

In the present study, investigator has selected gooseberry to provide vitamin C (ascorbic acid) because it is locally available than any other sources and also it has high value of vitamin C. (750mg in 100gm of gooseberry) and ferrous sulphate with 30mg of elemental iron for iron supplementation. Also during the review of literature the investigator came across many studies on synthetic ascorbic acid and iron absorption .Only few studies are a natural ascorbic acid and iron absorption. This gave insight to the investigator to study the effect of gooseberry juice on iron absorpt.

TITLE

Assessment on outcome of gooseberry juice with honey on the level of haemoglobin among Iron deficiency anemic adolescent girls aged 18-23 years.

STATEMENT OF THE PROBLEM

A Quasi experimental study to assess the outcome of gooseberry juice with honey on the level of haemoglobin among iron-deficiency anemic adolescent girls aged 18-23 years at a selected setting, Kakinada, 2011-2012.

OBJECTIVES

1. To assess the pre-test level of haemoglobin among iron deficiency anemic adolescent girls in the experimental and control group.
2. To assess the post-test level of haemoglobin among iron deficiency anemic adolescent girls in the experimental and control group.
3. To compare the post test level of haemoglobin among Iron deficiency anemic adolescent girls in the experimental and control group.
4. To determine the outcome of gooseberry juice with honey on Iron deficiency anemia among experimental group and control group.
5. To associate the mean difference of haemoglobin among Iron deficiency anemic among adolescent girls with their demographic Variables in the experimental group.

VARIABLES

Independent Variables:

Goose berry juice with honey.

Dependent Variables:

Level of haemoglobin.

Demographic Variables:

Age**,** Education Status**,** Type of Family**,** Religion**,** Number of Siblings in the family**,** Family Monthly Income **,**Dietary Habit ,Menstrual History and Level of haemoglobin.

RESEARCH HYPOTHESIS

1. **H_1-** There is a significant difference between pre-test and post-test level of haemoglobin in control group and experimental group.
2. **H_2-** There is a significant association of mean difference level of haemoglobin with their selective demographic variable in the experimental group.

OPERATIONAL DEFINITION

Outcome:

It refers to the impact of gooseberry juice with honey on the level of haemoglobin among iron deficiency anemic adolescent girls after the oral administration of 30ml gooseberry juice with honey given before meal consequently for 30 days of duration. Pre test and post test as measured by means of bio physiological method.

Iron Deficiency anemia

It refers to adolescent girls who are having the level of haemoglobin from 8.1-11gm/dl.

Gooseberry Juice with Honey

Gooseberry flesh was extracted and made into juice and 25ml of this juice along with 5ml of honey total 30ml was given to the adolescent girls per head per day at once before meal consequently for 30 days by the investigator.

Adolescent Girls

It refers to the girls aged group between 18-23 years, residing at Sriram College of Nursing hostel.

Level of haemoglobin

It refers to the measurement of level of haemoglobin by means of shali hemometer, 2ml of venous blood is drawn per head for test. Adolescent girls, who are having level of haemoglobin within the range of 8.1 to 11gm/dl, were included in the study.

ASSUMPTION

1. Most of the adolescent girls have Iron-Deficiency anemia.
2. Gooseberry Juice contains Vitamin 'C' which enhances the iron absorption; and it reflected with an increase in haemoglobin level.

DELIMITATION

1. The study was delimited to a period of four weeks of data collection
2. The study was delimited to Sriram college of Nursing Girls hostel Kakinada settings.

PROJECTED OUTCOME

This study will enable the adolescent girls to include iron rich diet and follow balance diet.

Application of study findings will help to make standard nursing care for adolescent girls with anemia.

SUMMARY

This chapter dealt with the background of the study, significance and need for the study, title, statement of the problem, objectives, variables of the study, hypothesis of the study, operational definition, assumptions, delimitation and organization of the report.

ORGANIZATION OF THE REPORT

The following chapter contains

CHAPTER II – Review of Literature and Conceptual Framework

CHAPTER III – Methodology

CHAPTER IV – Data Analysis and Interpretation

CHAPTER V - Summary and Recommendations

This is followed by reference and appendices.

CHAPTER -II

REVIEW OF LITERATURE

Review of literature is a systematic search of published work to gain information about a research topic (Polit and Hungler, 2006). Conducting a review of literature is Challenging and enlightening experience. Through the literature review, researcher generates a picture of what is known about a particular situation and the knowledge gap that exists between the problem statement and the research subject problem and lays a Foundation for the research plan.

The present literature review was based on an extensive survey of journals, books and international nursing indicates. A review of literature relevant to the study was Undertaken, which helped the investigator to develop deep insight into the problem and gain information on what has been done in the past.

An extensive review of literature was done by the investigator to lay a broad foundation for the study and a conceptual framework to proceed with the study under the following heading.

Part1: Review of literature

- **SECTION A: Literature related to anemia.**
- **SECTION B: Literature related to gooseberry**
- **SECTION C: Literature related to the outcome of fresh goose berry juice on Iron deficiency anemia.**

SECTION A: Literature related to anemia

Ghosh S. (2009), conducted a study that investigates the socioeconomic risk factors of anemia among women belonging to Eastern Indian States. Using data from National Family Health Survey -3, 2005-6, a nationally representative cross-sectional survey that provided information on anemia level among 19,695 women of this region, the present study found that

the prevalence of anemia was high among all women cutting across social class, location and other attributes. In all 47.9% were mildly anemic(10.0- 11.9 g/dl), 16.1% were moderately anemic(7.0-9.9 g/dl) and 1.6% were severely anemic (<7.0 g/dl). Urban poor women and adolescent ever-married women had very high odds of being anemic.

Xu W, Miao K.R et al (2009) conducted a study on the negative prognostic significance of positive direct antiglobulin test (DAT) in Chinese patients with chronic lymphocyctic leukemia. The aim of the study was to explore the prognostic impact of positive DAT at diagnosis in Chinese patients with CLL. In 123 Chinese patients with CLL, 34(27.6%) patients presented with a positive DAT at diagnosis. However only 12 Patients (9.8%) with a positive DAT developed autoimmune hemolytic anemia (AHA). The study showed that DAT status might be applied for the assessment of prognosis in Patients with CLL.

Brand R. (2009) conducted a study on allogeneic stem cell transplantation for patients with refractory anemia with matched related and unrelated donors: delay of the transplant is associated with inferior survival. The study evaluated the impact of various pre-transplant variables, including disease duration, intensity of the conditioning regimen, type of donor and year of transplantation on outcome. The study population consisted of 374 patients; 244 were transplanted from human leukocyte antigen (HLA) – identical Siblings and 130 patients from matched unrelated donors. Multivariate analysis showed an improved survival (p=0.05) and a lower NRM (p=0.02) when the transplantation was Performed in recent years. Increasing age, and disease duration of >12 months were associated with inferior survival.

Chandrakala (2009), conducted a study to assess the nutritional status of rural adolescent girls, to measure their knowledge about maternal and nutritional needs, to measure their dietary intake, and to determine the socio-cultural aspects among 47 adolescent girls aged between 13-18 years who attended a workshop on health and development organized by the Center of Child Health at Vellore, in India. The overall mean hemoglobin value was 10.0g/dl 73.5% of the subjects who had hemoglobin value below 12gm/dl (WHO Standard) and hence classified as anemic. The mean hemoglobin level increased with increasing age with the lowest being 13 years (9.8g/dl) and the highest at the age of 17 years (11.9gm/dl).The mean age of menarche was 14.3 years.

The diet was predominantly rice. Consumption of vegetables, milk and meat were very low, which might have been the causes for prevalence of anemia among girls. The findings show that rural adolescent girls have mild to moderate anemia. Thus the awareness must be created and nutritional supplements need to be provided.

Lloyd A. (2008), conducted a study on health state utility scores for cancer-related anemia through societal and patient valuations. The study aims to determine the preferences and utility values for health state descriptions of anemia associated with cancer treatment. Health state descriptions were reviewed by clinicians and two quality of life experts. Eighty five members of the general public were asked to rate the health states using a visual analogue scale and standard gamble (SG). The health state utility scores from both groups show a decrement in line with worsening anemia. Furthermore, patients who have experienced cancer-related fatigue rate the more severe levels of anemia much lower than the general public.

Choudary et. al (2007), conducted a cross sectional study to assess anemia among unmarried adolescent girls in South india,100 adolescent girls ,aged from 11-18 years were selected as samples by purposive sampling method. Blood samples were selected and hemoglobin test was done. The result showed that 29% of adolescent girls were affected with severe anemia, rest of them had mild anemia 71% ($P<0.05$).Anemia has a significant association with low socio-economic status, religion and reporting of infrequent or non-consumption of meat. He concluded that the hemoglobin status of then adolescent girls needs to be improved through dietary modification along with the iron supplements and nutritional education.

Rohini et. al (2007), retrospective study was conducted by to assess the prevalence of anemia among adolescent girls in 16 slums at Pune. 1142 adolescents were selected as samples by using random sampling technique. Data collection was done based on bio physiological measures, dietary history, morbidity history, anthropometric measures, mental history, frequency of lemon consumption with meals , consumption of locally available iron rich foods. The result showed that 1.3% of girls were severely anemic and 58% of girls were moderately anemic ($P<0.01$) in the study population.

Suman et. al (2006), conducted cross sectional study to screen out the health pattern of the adolescent girls in the age group of 10-14years.A total of 110 healthy adolescents were taken as samples by purposive sampling method. Diet survey and serum hemoglobin level were assessed .The result showed that less than 10% of the girls had 12gm/dl of hemoglobin and others were anemic with hemoglobin level in the range of 6 to 11.9gm/dl ($p<0.05$).The report concluded that the daily food allowance for adolescent girls were inadequate for which the amount of iron and vitamins should be increased .

Sabita, (2006), conducted a descriptive study to assess the prevalence rate of anemia among school going adolescents at Jabalpur. A sample of 183 adolescents was taken from the age group of 12 to 18 years by using random sampling technique. The estimation of hemoglobin was done by cyan met hemoglobin method and serum Ferritin was estimated. The overall prevalence of anemia was significantly higher among the girls (23.9%) when compared to boys (3.75%).Anemia was observed more among rural (25.4%) adolescents than urban (14.2%) adolescents. There was a deficiency of 81.7% and 41.6% of serum Ferritin among adolescent girls and boys respectively.

Nandita (2006), conducted a descriptive study to assess the prevalence of anemia and impact of anemia control programme among adolescent girls for which 512 school going adolescent girls were selected by using random sampling technique. The result showed that the prevalence of anemia in adolescent girls to be 80.6%.Dietary intake of the adolescent girls revealed that there was an inadequate intake of food. Almost (90.9%) of adolescent girls were consuming less than 50% of required dietary allowance, the finding showed that there was a high prevalence of anemia among the study population ($p<0.001$) due to inadequate intake of food and thereby a poor dietary intake of iron.

Pawashe (2006), conducted a study regarding iron nutritional status of adolescent girls belonging to an urban slum and rural areas. Overall anemia was observed in 25% of the girls irrespective of their residence. A higher percentage of rural girls (37.5%) especially below the age of 12 years showed evidence of anemia. Thereafter the prevalence was similar in both urban and rural girls who had not attained menarche. With increasing age, urban girls who had attained

menarche showed an increase in the prevalence of anemia. The prevalence of iron deficiency (serum ferritin < 12 mg/dl) showed a progressive increase from 28% to 60% over 12 years especially in the girls (p=0.03). Findings suggested that distribution of iron and folate tablets correct anemia to the vulnerable groups is essential.

Nilson A. (2005) conducted a survey on adolescent anemia. The samples were 88 female high school adolescent who were surveyed by using visual analogue scale for the prevalence of anemia. The result showed that the majority of female adolescent (91%) were identified with symptoms of anemia, the finding showed that there was a high prevalence of anemia among the study population (p<0.001) due to inadequate intake of food and thereby a poor dietary intake of iron.

Leenstra et al., (2004), conducted a cross sectional study to assess the prevalence of anemia among adolescent girls. A total of 648 adolescent school girls aged 12-18 years were randomly selected by using multistage sampling design .The prevalence of anemia among (Hb<12gm/dl) was 21.1%. Only one girl had the hemoglobin less than the 7gm/dl. The prevalence of anemia among adolescent girls were 19.8%, in which 30.4% of anemic was exclusively due to iron deficiency. Malaria and Schistosomiasis were the main risk factor in other girls (14-18). Findings suggested that menstruating girls are at higher risk of developing anemia.

Al-Sharbatti (2003), conducted a study to determine the prevalence of anemia in a group of apparently healthy school adolescent selected from 2 distinct socio-economic areas. A random sample of 105 adolescents was selected by using Non- Probability purposive sampling technique. 46% of them were from A1-mansoor area for high socio-economic area and 54% of them from A1-Holya areas for low socio-economic area in Baghdad, the finding showed that there was a high prevalence of anemia among the study population (p<0.5) due to inadequate intake of food and thereby a poor dietary intake of iron.

Ahmed et. Al (2001) conducted a study on the prevalence of anemia and iron deficiency among adolescent girls in peri urban Bangladesh and to identify various factors associated with

anemia. The prevalence of anemia was twenty seven percent. Of all anemic girls, Thirty two percent had iron deficiency anemia. They concluded that anemia cannot be explained by iron deficiency alone and other causes may also exist.

Manimaya et. al (2000) conducted descriptive study to assess the prevalence of anemia among adolescent girls for which 630 schools going adolescent girls were selected. The result showed that the prevalence of anemia in adolescent girls to be 80.6%.Dietary intake of the adolescent girls revealed that there was an inadequate intake of food .Almost 84.3% of adolescent girls were consuming less than forty percent required dietary allowance and the findings showed that there was a high prevalence of anemia among the study population ($p<0.001$) due to inadequate intake of iron supplementation.

Muslimmanton et. al (2000), conducted a cross sectional study to identify the different nutritional and iron status characteristics of young adolescent girls (10-12years) with iron deficiency anemia and anemia without iron deficiency in the rural coastal area of Indonesia. Anemic girls (N=133) were selected out of 1358 girls from 34 elementary schools by using Non-Probability purposive sampling technique. Hemoglobin, serum ferritin, serum transferring receptor and zinc were measured for their nutritional status. Out of 133 anemic girls, 29(21.8%) suffered from iron deficiency anemia($p=0.002$), which is not significantly related to age and menarche. The current iron folate supplementation programme for pregnant women should be expanded to adolescent girls.

Jackson (2000), examined the prevalence of anemia in adolescent Kuwaiti school girls and its association with hemoglonbinopathies as well as the most common environmental cause for deficiency. Revealed of the subjects sampled, 30% were environmental factors play a significant role in anemia among healthy well to do Kuwaiti adolescent girls.

SECTION B: Literature Related to Gooseberry

Shrinath (2011), conducted a study to evaluate the gooseberry extract in the treatment and prevention of cancer, gooseberry, is arguably the most important medicinal plant in the Indian traditional system of medicine, the ayurveda. Gooseberry can be

used either alone or in combination with other plants to treat many ailments such as common cold fever; as a diuretic, laxative, liver tonic, refrigerant, stomachic, restorative, alternative, Antipyretic, anti-inflammatory, hair tonic; to prevent peptic ulcer and dyspepsia, and as a digestive. Gooseberry properties that are efficacious in the treatment and prevention of cancer. This review for the first time summarizes the results related to these properties and also emphasizes the aspects that warrant future research to establish its activity and utility as a cancer preventive and therapeutic drug in humans.

Kapoor S (2010), conducted a study to assess the effectiveness of gooseberry on serum cholesterol levels in men aged 35-55 years. 70 samples were selected by using purposive sampling technique. The gooseberry supplement was given for a period of 28 days in the raw form. Both normal and hypercholesterolemia subjects showed a decrease in cholesterol levels. Two weeks after withdrawing the supplement, the total serum cholesterol levels of hypercholesterolemia subjects rose significantly almost initial levels.

Am J Chin Med (2009), conducted a study to determine whether supplementation with gooseberry extract could reduce oxidative stress in patients with uremia. In addition, Gooseberry often functions as potent antioxidant due to the high level of ascorbic acid in its fruit. The findings show that supplementation with gooseberry extract for 4 months reduced the plasma oxidative marker,8-iso-prstaglandin and increased plasma total antioxidant status in uremic patients. On the other hand, there were no significant differences observed in liver function, renal function (creatinine, blood urea nitrogen and uric acid), diabetic index (plasma glucose and adiponectin) and atherogenic index in patients treated with gooseberry for 4 months. Our data suggest that gooseberry supplementation may increase plasma antioxidant powder and decrease oxidative stress in uremic patients.

Kulkarni A (2008) conducted a study on gooseberry juice. The study aims to determine that the gooseberry juice strengthen body's defense. Gooseberry juice contains ascorbic acid, which strengthen the immune system. Gooseberry juice also helps to maintain cell functions and strengthens the body's own natural resistance.

Thomas Paul A (2007), conducted a study to assess the effectiveness of gooseberry on diabetic patient. The extract of gooseberry showed the hypoglycemic activity in streptozotocin induced diabetic patient within 30 days of administration. The written administration of the extract resulted in increase in serum insulin level in diabetic patient. In mild diabetes (plasma sugar >180 mg/dl) it shows 73.51% reduction, whereas in moderate (plasma sugar >280 mg/dl) and severe diabetes (plasma sugar >400 mg/dl) it is reduced to 55.62 % and 17.72 % respectively These extracts also inhibited insulin's activity from liver and kidney.

Sharma A (2006), conducted cross sectional study to assess the controlling blood pressure. Gooseberry is very good remedy for controlling blood pressure due to its extremely high Vitamin C content. The gooseberry reduces accumulation of cholesterol in the arteries, which is one of prime reason for high blood pressure.

SECTION C: Literature related to the effectiveness of gooseberry juice on iron deficiency anemia.

Shampa Chakrabortia (2010), conducted a study to evaluate the effect of gooseberry on iron deficiency anemia. Total of twenty five blood samples of teen-aged girls (14-18 yrs) at Pune by using purposive sampling method for the detection of iron-deficiency anemia for the purpose of improvement of reproductive health of adolescence girls in rural area. The objective of the studies is to find the Iron deficiency anemia among teen-aged girls of the tested population by the indicators (Hemoglobin,) generally used for assessment of anemia. Result indicates some relationship of iron deficiency anemia to thrombopoiesis. One group (8) iron tablets, with 40 mg of elemental iron, while the other group (17) received 25 ml of gooseberry with daily intake of regular food Finally, anemia prevalence was reduced from 52% to 13.5% ($p<0.001$) by giving gooseberry juice to one group and there is no much improve shown in group who received Iron tablets ($p>0.001$).

Kotecha et al (2009), conducted a study on effectiveness of gooseberry juice on anemia among pregnant women. The study evaluated that gooseberry juice is an excellent treatment for anemia. Pregnant women were selected by using purposive sampling method. Findings shows that there was an marked improvement in the hemoglobin level at ($p<0.01$) among pregnant women.

S Kart (2008), conducted a comparative study to evaluate the treatment of iron deficiency anemia. adolescent girls were selected from eight different communities by using purposive sampling method. administered gooseberry juice was given to the experimental group and effect of the intervention was evaluated by using cyanomethemoglobin. The result shows that there was a significant improvement of hemoglobin level ($p<0.01$) from 8.75 to 10.5 gms/dl, whereas in the control group there was no change.

Pereira et.al (2007), experimental study was conducted by to evaluate the treatment of iron deficiency anemia. 267 school children, 6-14 years of age group were randomized into two treatment groups. One group (123) iron tablets, with 40 mg of elemental iron, while the other group (144) received 25 ml of gooseberry juice with daily food. Finally, anemia prevalence was reduced from 58.1% to 17.7% ($p<0.001$) in the group receiving gooseberry juice and there is no much improvement shown in group who received Iron tablets ($p<0.001$).

Hinton, Sinclair (2006) conducted a study to determine the effect of iron supplementation on iron status and endurance capacity. In this study twenty iron deficient men and women were participated. A 30 mg measure of dietary intake of Iron table daily for 6 weeks was given to the study participants. The results were level of hemoglobin significantly improves and endurance capacity in iron deficient male and female subjects ($p<0.01$) from 7.75 to 9.42gms/dl.

Juinil(2005) was conducted a clinical correlation study on the impact of vitamins in iron absorption among 200 adolescent girls. Hemoglobin and serum retinol studies were done for the samples. The study revealed that there is an observed correlation between serum retinol and hemoglobin levels. The girls with a low serum retinol concentration are more likely to have iron-deficiency anemia (76.1%), compared to those with normal to high levels of retinol

(24.9%).While vitamin A deficiency has an adverse effect on hemoglobin synthesis, even a slight increase in vitamin A intake can lead to significant rise in hemoglobin levels($p<0.001$). Ascorbic acid plays an important role in modulating ferritin synthesis iron storage.

Brady et. al (2003) conducted a clinical study on iron supplementation and absorption in the presence and absence of ascorbic acid. The study revealed that fortification with ascorbic acid(gooseberry) increases the bio availability in both presence and absence of inhibiting substances (coco, caffeine items). Ascorbic acid contains micro encapsulation with lecithin, which binds and protects the iron particles from the action of inhibiting substances (84%) when human takes the iron supplements along with gooseberry helps to get the higher amount of iron absorption ($p=0.02$).

Gopaldas (2002), conducted an experimental study among young women 18-23 years of age in Tara consultancy services, Bangalore. Four small factories were selected in peri urban Bangalore, with a sample of 302 women. The 180 days interventions were supervised at the workplace. In unit 1 (72 women) ,the intervention consisted of idli four times a week plus information, education, and communication(IEC) related to iron deficiency anemia .Unit 2 (80 women) received 20 ml of gooseberry juice three times a week plus IEC once a month. Women in unit 3 (70 women) ,the positive control ,received 400mg albendazole once plus ferrous sulfate tablets two times a week. The pre-post impact were in unit 1, 2, and 3,the hemoglobin status of the women improved significantly from 11.10 to 12.30 g/dl ,11.20 to 12.70g/dl, and 11.50 to 13.00 gm/dl, respectively. In unit 4 there was no change; the values were 10.90 g/dl before and after intervention.

Februthartanty et. Al (2002), experimental study was conducted to assess the efficacy of two different iron supplement administered either on a weekly basis or during menstruation, among post menarcheal female adolescent students in Kupang. The study revealed that 30 ml of gooseberry juice continued for 16 weeks contributed a higher improvement to hemoglobin concentration compared with supplementing iron tablets for 16 weeks . The result says that there was significant improvement seen ($p<0.001$) after the intervention of gooseberry among iron deficiency adolescent girls .

Swarnalatha et. Al (2001) conducted an experimental study to assess the impact of iron, vitamin A and vitamin C supplementation on anemic adolescent girls at Sri Narayana higher secondary school, Ullipudhur. Hundred samples were selected between the age group of 13-15 years. The findings showed that initially over all 35.7 percent adolescent girls was anemic, mild and severe anemia in two percent of the subjects. At the end of the study overall 26.72 percent adolescent girls were anemic, 9.2 % were mild anemic and severe anemia in 0.98% of the subjects. There was a significant improvement seen after the intervention ($p<0.05$).

Nalwade Vijaya et. Al (2001), conducted a Quasi experimental study to assess the nutritional intervention for iron deficiency among 70 adolescent girls, between the age group of 12-18 years in Parbhani by using random sampling technique. Anthropometric measures, clinical signs and symptoms of nutritional deficiency disorders were assessed and 7 hours recall method was used to assess the food intake of the girls. Iron supplementation were supplemented to them for 90 days after which post test was done. At the end of the study there was a decrease in the prevalence of anemia (78%) among the experimental group. However in the control group there was no significant differences. There was a significant improvement seen ($p<0.001$) after the interventions.

Vijayalakshmi et. Al (2000), experimental study was conducted to assess the effectiveness of gooseberry on iron deficiency anemia among adolescent girls, at Mulaivail, Karur.150 samples were selected between the age group of 12-18 years by using non-rated sampling technique. The intervention was given for about 40 days. The findings revealed that socio-economic background indicated that 91.6 percent were from nuclear families, 81.8 percent were having a family size of 4-6, seventy four percent of girl's mothers were being illiterate, and over 75 percent in low income group, before the intervention it the mean value of hemoglobin was 9.1 gl/dl and after the intervention of gooseberry was 11.3gmldl.There was a significant improvement seen in the hemoglobin level ($p<0.001$).

Sharma Anshu et. Al (2000) conducted a study on identification of an appropriate strategy to control anemia in teenage girls of poor communities of Delhi and reported that sixty two percent of the respondents in the urban and eighty five percent in the rural area were anemic. The

response of the levels to daily gooseberry juice was better in comparison to once weekly supplementation of iron/folate. There was a significant improvement seen ($p<0.001$) in the group who received gooseberry and there was no significant improvement in the group who received iron tablet.

ICMR bulletin (2000), was conducted a study to evaluate the iron deficiency anemia among women in the rural area. The national nutritional anemia prophylaxis programme was initiated in 1970 to control iron deficiency anemia in the vulnerable group through daily supplements of iron tablets. The result revealed that there was a significant in improvement of hemoglobin level ($p<0.05$).

PART- II

Conceptual framework of the study

A conceptual framework on a model is made up of concepts, which are the mental changes of phenomenon. A conceptual framework is a set of coherent ideas or concepts organized in a manner that makes them easy to communicate to others. It provides an organized way of thinking about how and why a project takes place and about how we understand its activities.

Conceptual frameworks are a type of intermediate theory that has the potential to connect to all aspects of Inquiry (eg. Problem definition, purpose, literature review, methodology, data collection and analysis). Conceptual framework act like maps that give coherence to empirical inquiry. Because conceptual frameworks are potentially so close to empirical inquiry, they take different forms depending upon the research question or problem. The framework is linked to particular research purposes (exploration, description, decision making and explanation / prediction). The conceptual framework gives the idea to researcher about the main view and more of theme of the research. It is a visual diagram by which the researcher explains the specific area of interest.

The present study is aimed to assess the outcome of gooseberry juice with honey on the level of haemoglobin among Iron deficiency anemic adolescent girls aged 18-23 years. Hence, the study is based on Modified Roy's Adoption Model (1998).

The conceptual framework of present study is based on Roy's Adoptation Model (1998), the practice of nursing comprises a wide variety of services, each directed towards the attainment of one of its three components.

The main concept of this model is

- Input
- Throughput
- Output
- Feedback

INPUT

Input refers to stimuli which can come from the environment or from within a person. Adoptive responses were those that promote integrity and help the person to achieve, the goals of adoption. So the researcher applied input as assessing the client with demographic variables and dividing them into mild and moderate level of iron deficiency anemia.

THROUGH PUT

Through put is the operation or manipulation and actively phase. If it is the process that allows the input to be changed, so that it is useful to the system. So the researcher administered gooseberry juice with honey to the experimental group with regular diet and control group only the regular diet

OUTPUT

Output is way information that leaves the system and enters the environment through system. So the researcher assessed the level of haemoglobin by conducting post test in experimental and control group.

FEEDBACK

Feedback is the result of throughput. It allows It is the administration of gooseberry juice with honey to the experimental It showed increase in the level of haemoglobin in the experimental group and there was slight elevation in the level of haemoglobin in the control group.

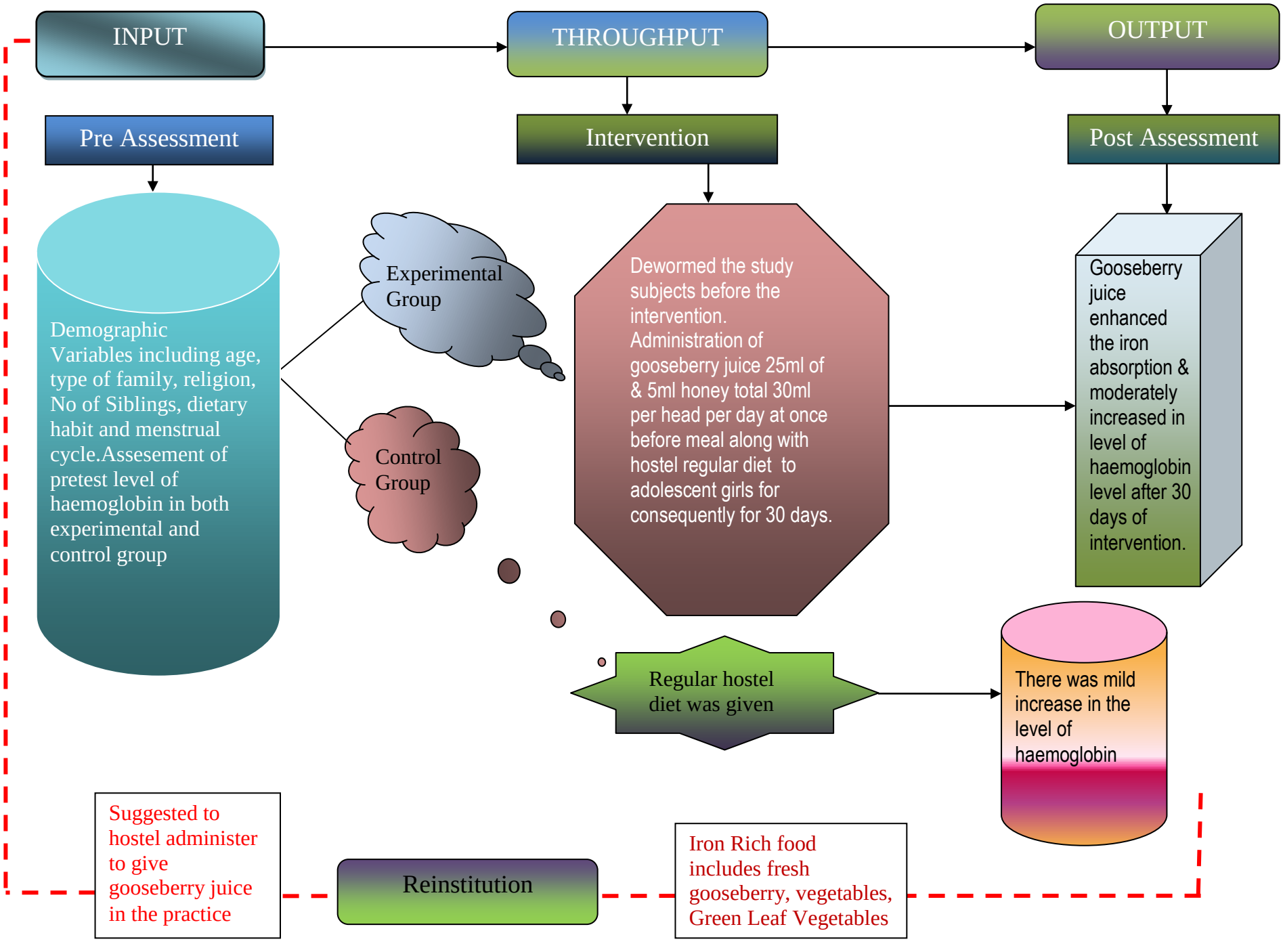

Fig1: MODIFIED ROY'S ADOPTION MODEL (1998)

CHAPTER -III

RESEARCH METHODOLOGY

Research methodology involves systematic procedure in which the research starts from initial identification of the problem to its final conclusion. The role of methodology consists of the procedure and technique for conducting a study.

This chapter involves the research methodology followed to assess the outcome of Gooseberry juice with honey on the level of haemoglobin among iron deficiency anemic adolescent girls at Sriram College of Nursing, Kakinada, 2011 -2012

It deals with the research approach, research design, setting of the study population, criteria for the selection of sample, sample size, sampling technique, development and description of the tool for data collection, content validity, pilot study, procedure for data collection and statistical analysis.

RESEARCH APROACH

The research approach used by the investigator was Quantitative research approach.

RESEARCH DESIGN

The investigator has chosen the Quasi experimental study research design to find out the outcome of gooseberry juice with honey on the level of haemoglobin.

RESEARCHVARIABLES

The variables under study are

Independent variables

Gooseberry juice with honey

Dependent variables

Level of haemoglobin

RESEARCH SETTING

The study was conducted in the selected setting, at Sriram College of Nursing hostel which comprises of 250 populations and located at Kakinada. It is Six Hundred kilometers Away from Vel R.S. Medical College- College of Nursing Avadi, Chennai.

POPULATION

Population refers to the entire aggregate of cases that meet the designated criteria, and entire set of individual who have common characteristics also it is important to make distribution between target and accessible Population, polit & Hungler.

Target population

Target population of the study comprised of the adolescent girls aged between 18-23 years with iron deficiency anemia.

Accessible population

Accessible population of the study comprised of the adolescent girls aged between 18 -23 years with iron deficiency anemia who were residing at Sriram College of Nursing girls hostel, Kakinada.

Sample

Adolescent girls aged between 18 – 23 years with iron deficiency anemia and who fulfilled the inclusion criteria, who reside at Sriram College of Nursing girls hostel, Kakinada.

Sample Size

The study sample consists of 60 adolescent girls who fulfilled the Inclusion criteria, in that 30 adolescent girls were in experimental group and 30 in control group.

Sampling technique

Non-probability purposive sampling technique was used to assess the outcome of gooseberry juice on the level of haemoglobin among adolescent girls aged between 18-23 years.

CRITERIA FOR SAMPLE SELECTION

Inclusion Criteria

1. Adolescent girls with haemoglobin level between 8.1-11 gms/dl.
2. Adolescent girls with the age group between 18-23 years.
3. Adolescent girls who were willing to participate in the study
4. Adolescent girls who were residing at selected hostel.

Exclusion Criteria

1. Adolescent girls who had major surgery within six months.
2. Adolescent girls who were allergic to gooseberry juice
3. Adolescent girls with the history of bleeding disorder
4. Adolescent girls who were having the treatment of severe anemia

METHODS OF DEVELOPING TOOL

The tool was developed after an extensive review of literature, internet sources and opinion of experts. It was decided that the bio physiological measurement could be an appropriate tool for assessment of level of haemoglobin of the adolescent girls. The tool used for the data collection had two sections.

Section A

Demographic Variables

It deals with demographic variables such as age, educational status, type of family, Religion, number of sibling in the family, monthly income, dietary and menstrual history and level of haemoglobin.

Section B

Bio physiological measurements of haemoglobin by using shali hemometer by drawing 2ml of venous blood per head and immediately checked the samples the result was obtained.

VALIDITY AND RELIABILITY OF THE TOOL

Validity

The content of the tool was validated by, one alternative medicine person, three nursing experts specialized in community health nursing and no harm certificate was obtained from dietician.

Reliability

The reliability of the tool to assess the level of haemoglobin was established by using the inter rater reliability method. The ‘r’ value was 0.9 which indicates highly positive correlation and this shows that the tool was found to be feasible to precede the study.

ETHICAL CONSIDERATIONS

Ethical considerations refer to a system of moral values that was concerned with the degree to which research procedure adheres to professional, legal and social obligations to the study.

The study was conducted after the approval of dissertation committee. No harm certificate was obtained from dietician. Formal permission was obtained from the head of the institution of Sriram College of Nursing Girls hostel, Kakinada before proceeding with the study. The adolescent girls were clearly explained about the study purpose and written consent was

obtained. It was assured to the adolescent girls that the data will be used only for this research purpose and the result will be kept confidential. Anonymities of the study was maintained and explained about the importance of gooseberry juice and also the rights of withdrawal from the study.

PILOT STUDY

The pilot study was conducted at Uma girls' hostel in Avadi on 20/05/2011- 19/6/2011. The formal permission was obtained from head of the institution. A brief introduction about self and study was given and data was collected from the adolescent girls. Written consent was taken from subjects and confidentiality of the responses was assured. The objectives of the study were explained. The data related to the variables were collected. Screening was done among 18 adolescent girls and 10 adolescent girls who fulfill the inclusive criteria were selected and divided into 5 experimental and 5 control group by Non- Probability purposive sampling technique. Dewormed the study subjects before the intervention. Gooseberry flesh was extracted and made into juice and 25ml of this juice along with 5ml of honey total 30ml was given to the adolescent girls per head per day at once before meal consequently for 30 days by the investigator. For control group regular hostel diet was given and post-test level of haemoglobin was checked on 20-06-2011 for both the groups.

The statistical analysis of the pilot study suggested a positive correlation between gooseberry juice with honey and level of haemoglobin. The 'r' value obtained was 0.9. The study was found to be reliable and appropriate, and hence the procedure was decided to be followed in the main study.

DATA COLLECTION PROCEDURE

The main study was conducted at Sriram College of Nursing girls hostel, Kakinada from 23-06-2011 to 22-07-2011. Formal permission was obtained from the head of the institution. A brief introduction about self and study was given and data was collected from the adolescent girls. Written consent was taken from subjects and confidentiality of the responses was assured. The data related to the variables were collected. Screening was done for 130 adolescent girls by using sahli hemometer and 60 adolescent girls who fulfilled the inclusion criteria were selected

and divided 30 into experimental group and 30 into control group by Non- Probability purposive sampling technique. Dewormed the study subjects before the intervention. Gooseberry flesh was extracted and made into juice and 25ml of this juice along with 5ml of honey total 30ml was given to the adolescent girls per head per day at once before meal consequently for 30 days by the investigator .For control group regular hostel diet was given. Post-test was done on 23-07-2011 in both the group.

DATA ANALYSIS PROCEDURE

Both descriptive and inferential statistics were used.

Descriptive Statistics

Frequency and percentage distribution was used to analyze the variables of the adolescent girls in experimental and control group. Mean and standard deviation was used to compare the pre test and post test level of haemoglobin.

Inferential Statistics

Paired‘t’ test was used to assess the effectiveness of gooseberry juice with the honey on the level of haemoglobin Chi-square ‘t’ test was used to associate the mean improved level of haemoglobin among adolescent girls with the demographic variables.

CHAPTER- IV

DATA ANALYSIS AND INTERPRETATION

This chapter deals with the analysis and interpretation to assess the outcome of gooseberry juice with honey on the level of haemoglobin among iron deficiency anemia adolescent girls. Descriptive and inferential statistics were used for the analysis of the data.

According to the study objectives the interpretation has been tabulated and organized as follows:

ORGANISATION OF DATA

Section A: Description of demographic variables of the adolescent girls in the experimental and control group.

Section B: Assessment of pre test level of haemoglobin among adolescent girls in the experimental and control group.

Section C: Assessment of post test level of haemoglobin among adolescent girls in the experimental and control group.

Section D: Comparison of pre test and post test level of haemoglobin among adolescent girls in experimental group and control group.

Section E: Outcome of gooseberry juice with the honey on level of haemoglobin among iron deficiency anemic adolescent girls.

Section E: Association of mean improved level of haemoglobin among adolescent girls with the demographic variables in the experimental group.

SECTION: A

Table: I

Frequency and percentage distribution of demographic variables in the experimental group and control group.

n=60

Demographic Variables	Experimental Group		Control Group	
	No.	%	No.	%
Age in years				
18 – 19	14	46.67	14	46.67
20 – 21	10	33.33	10	33.33
22 – 23	6	20.00	6	20.00
Educational Status				
1st Year B.Sc.	18	60.00	18	60.00
2nd Year B.Sc.	6	20.00	4	13.33
3rd Year B.Sc.	4	13.33	5	16.67
4th Year B.Sc.	2	6.67	3	10.00
Type of family				
Nuclear	18	60.00	21	70.00
Joint	12	40.00	9	30.00
Others	0	0.00	0	0.00
Religion				
Hindu	9	30.00	10	33.33
Christian	18	60.00	17	56.67
Muslim	3	10.00	3	10.00
Others	0	0.00	0	0.00
Number of siblings				
One	14	46.67	15	50.00
Two	11	36.67	12	40.00
Three & More	5	16.67	3	10.00

Demographic Variables	Experimental Group		Control Group	
	No.	%	No.	%
Family Monthly Income				
<3000 rupees	8	26.67	7	23.33
3001 – 5000 rupees	4	13.33	5	16.67
>5000 rupees	18	60.00	18	60.00
Dietary Habit				
Vegetarian	3	10.00	2	6.67
Non-vegetarian	27	90.00	28	93.33
Menstrual Cycle				
Regular	18	60.00	16	53.33
Irregular	12	40.00	14	46.67
Level of Haemoglobin				
9.1-11gm/dl	22	73.33	26	86.67
8.1-9gm/dl	8	26.67	4	13.33
<8gm/dl	-	-		

Table 1 shows the frequency and percentage distribution of the demographic variables among iron deficiency anemic adolescent girls.

With regard to the age in the experimental group, majority 14(46.67%) iron deficiency anemic adolescent girls were in the age group of 18-19 years 10(33.33%) of them were in the age of group of 20-21 years and 6(20.00%) of them were in the age of 22-23 years. Where as in control group majority It was the same like in the control group14(46.67%)iron deficiency anemic adolescent girls were in the age group of 18-19 years 10(33.33%) of them were in the age of group of 20-21 years and 6(20.00%) of them were in the age of 22-23 years.

Regarding the education status of the adolescent girls, in the experimental group; majority had 18(60.00%) 1st year B.sc Nursing, 6(20.00%) B.sc Nursing, 4(13.33%) had 3rd year B.sc Nursing and 2(6.67%) had 4th year B.sc Nursing. In control group 18(60.00%) had 1st B.sc Nursing, 4(13.33%) had 2nd year B.sc Nursing, 5(16.67%) had 3rd year B.sc Nursing and 3 (10.00%) had 4th year B.sc Nursing.

Considering to type of family, in the experimental group18 (60.00%) belongs to nuclear family, and 12(40.00%) were under joint family, where as in the control group 21(70.00%) belongs to nuclear family and 9(30%) were living in a joint family.

Regarding religion, out of 30 adolescent girls in the experimental group, 9(30.00%) were Hindus, 18(60.00%) were Christians and 3(10.00%) were Muslims. In control group 10(33.33%) were Hindus, 17(56.67%) belongs to Christians and 3 (10.00%) were Muslims.

Regarding siblings in the experimental group majority, 14(46.67%) were no siblings in family, 11 (36.67%) had two siblings and 5(16.67%) had three and more siblings. Where as in control group 15(50.00%) had no other siblings in the family, 12(40.00%) had two siblings and3(10.00%)had three siblings in the family.

Considering the family monthly income in the experimental group, majority 18(60.00%) were with the income of below Rs.3000, 8(26.67%) were with the monthly income of Rs.3000-5000, and 4(13.33%) were with the income of above Rs.5000. In control group, majority18 (60.00%) were the income of above Rs. 5000, 7(23.33%) were with the income of above Rs.3000 and 5(16.67%) were with the income of Rs. 3001-5000.

Regarding the dietary habit in the experimental group, majority 27(90%) were non-vegetarian and3 (10%) were vegetarian. Where as in control group, majority 28(93%) were belongs to non-vegetarian and 2(6.67%) were vegetarian.

Considering the menstrual history, in the experimental group, majority 18(60.00%) were regular menstrual cycle and 12(40.00%) were irregular menstrual cycle. In control group, 16(53.33%) were regular menstrual cycle and 14(46.67%) were irregular menstrual cycle.

Regarding the level of haemoglobin in the experimental group, majority 22(73.33%) were range between 9.1-11gm/dl, 8(26.67%) were 8.1-9gm/dl and none of the subjects were <8gm/dl. In control group, 26(86.67%) were range between 9.1-11gmdl, 4(13.33%) were 8.1-9gm/dl and none of the subjects were<8gm/dl.

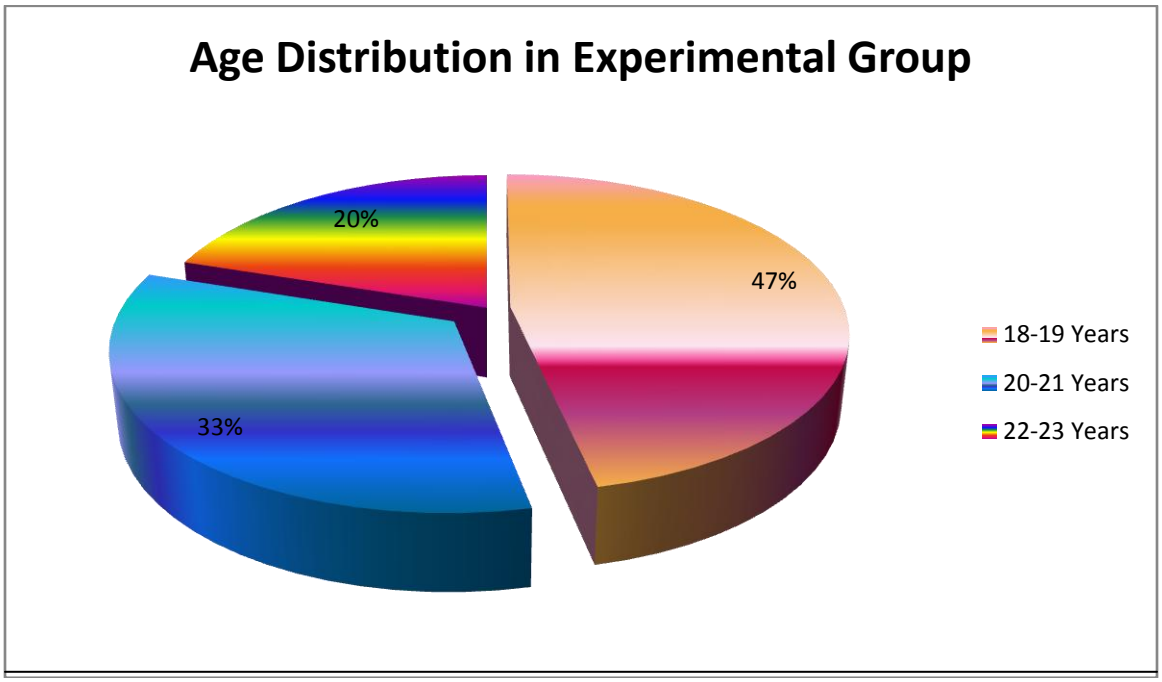

Fig 2: Frequency and Percentage Distribution of adolescent girl's age among experimental group

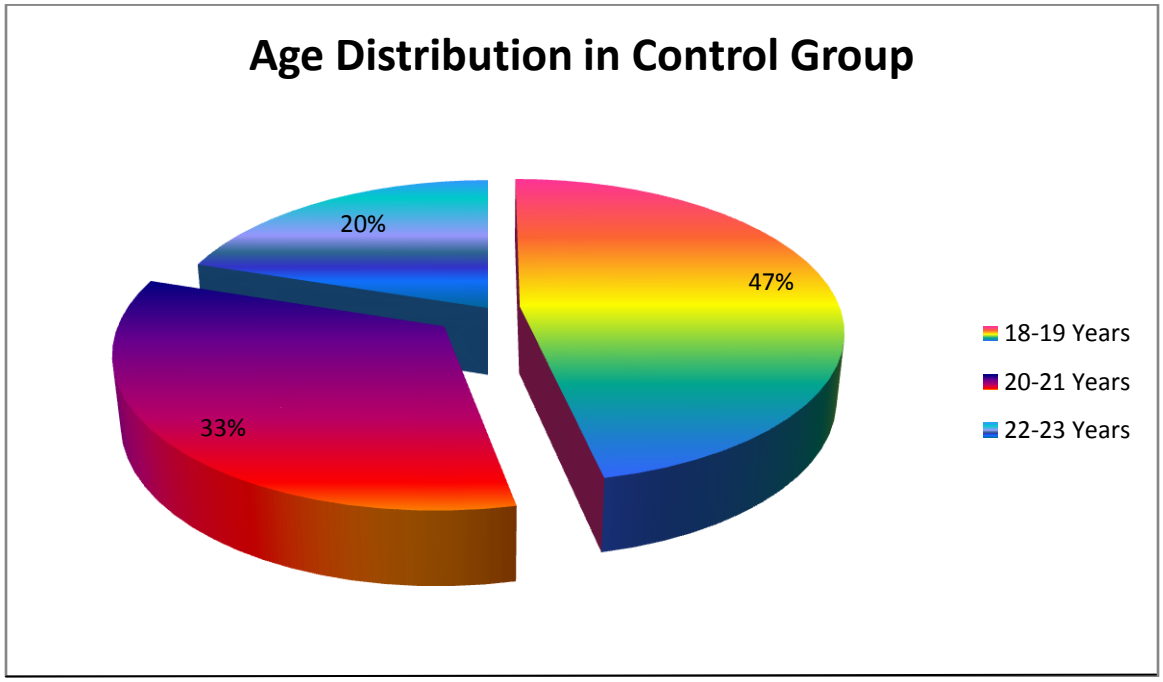

Fig 3: Frequency and Percentage Distribution of adolescent girl's age among and control group

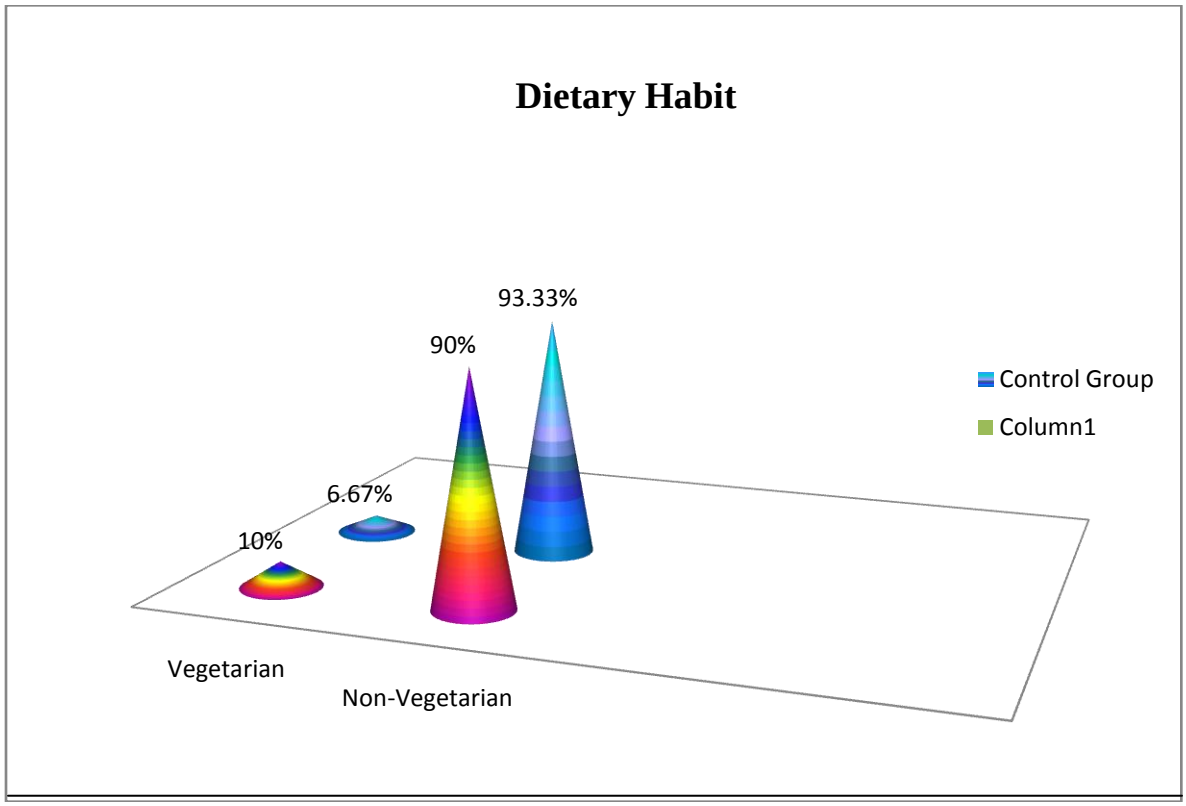

Fig 4: Frequency and Percentage Distribution of adolescent girl's dietary habit among experimental group and control group

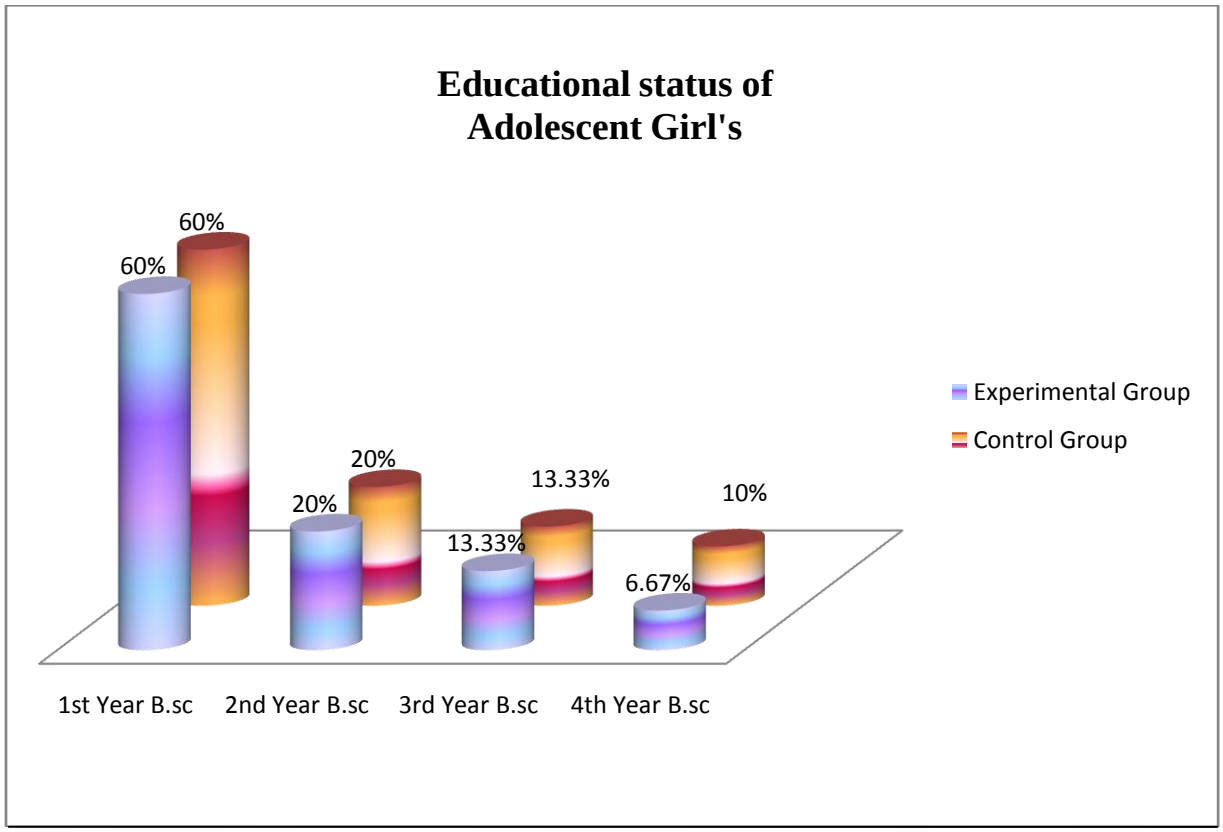

Fig 5: Frequency and percentage distribution of adolescent girl's education status among experimental group and control group

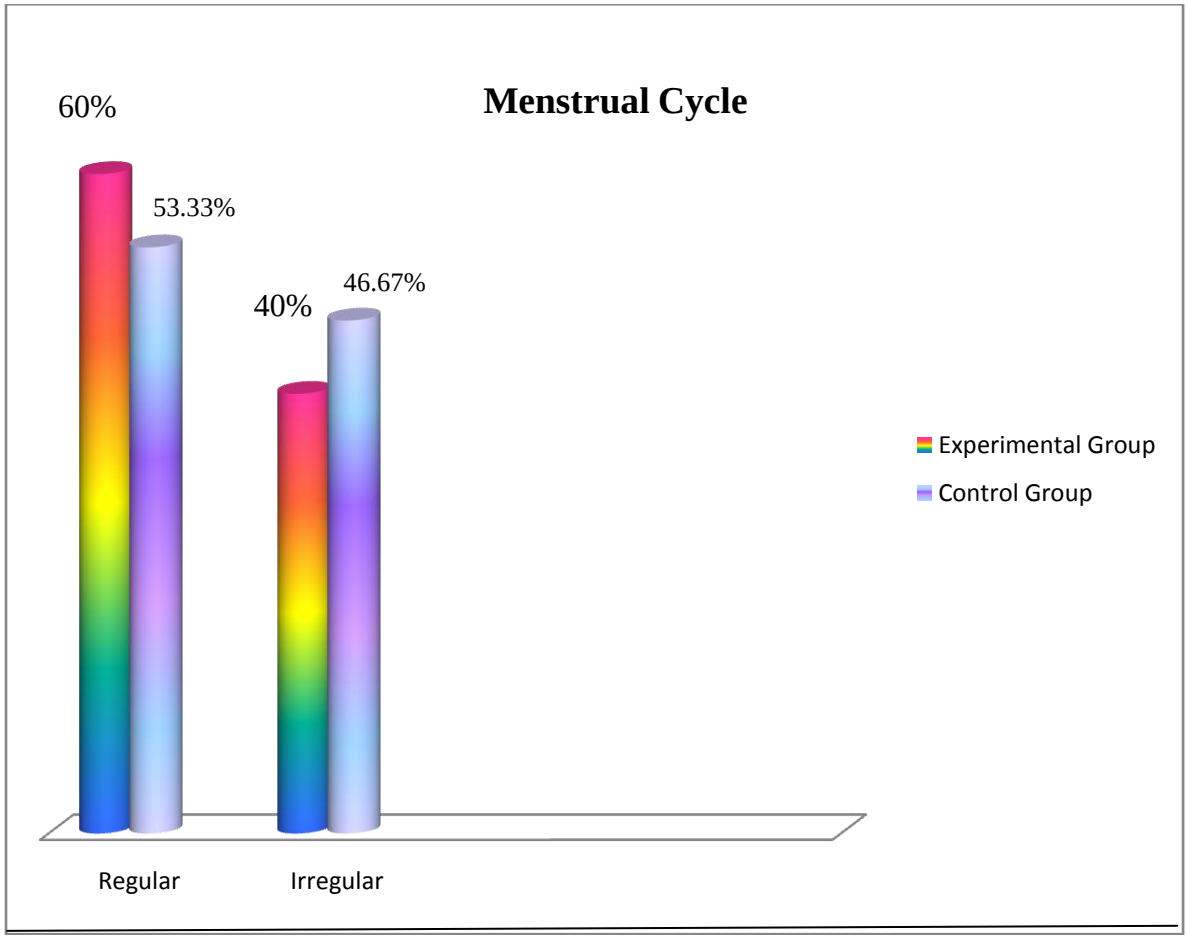

Fig 6: Frequency and percentage distribution of adolescent girls menstrual cycle among experimental and control group

SECTION: B

Table: II

Frequency and percentage distribution of pretest and post test levels of haemoglobin in the experimental group.

n=30

Iron Deficiency anemia	Mild (9.1-11)gms/dl		Moderate (8.1-9)gms/dl		Severe (<8 gms/dl)	
	No	%	No	%	No	%
Pretest	22	73.33	8	26.67	0	0
Posttest	30	100.0	0	0	0	0

Table II shows the pre and post test level of haemoglobin among Iron deficiency anemic adolescent girls in the experimental group.

The table further reveals that in the pre test 22(73.33%) comes under mild iron deficiency anemia, 8(26.67%) comes under moderate iron deficiency anemia and none of the subject were under severe iron deficiency anemia. Where as in the post test 30(100.00%) comes under mild iron deficiency anemia and none of them comes under moderate iron deficiency anemia and none of the subjects were under severe iron deficiency anemia in the experimental group.

SECTION: C

Table: III

Frequency and percentage distribution of pretest and post test level of haemoglobin in the control group.

n=30

Iron Deficiency anemia	Mild (9.1-11)gms/dl		Moderate (8.1-9)gms/dl		Severe (<8 gms/dl)	
	No	%	No	%	No	%
Pretest	26	86.67	4	13.33	0	0
Posttest	24	80.0	6	20.0	0	0

Table III shows the pre and post test level of haemoglobin among Iron deficiency anemic adolescent girls in the control group.

The table further reveals that in the26 (86.67%) comes under mild iron deficiency anemia and 4(13.33%) comes under moderate iron deficiency anemia and none of the subject were under severe iron deficiency anemia in the experimental group. Where as in the post test 24(80.00%) comes under mild iron deficiency anemia and 6(20.00%) comes under moderate iron deficiency anemia and none of the subjects were under severe iron deficiency anemia in the control group.

SECTION: D

Table: IV

Comparison of pre test and post test level of haemoglobin in the experimental group.

n=30

Hemoglobin	Mean	S.D	't' Test
Pretest	**9.17**	**0.39**	**t= -19.418*** **
Posttest	**10.71**	**0.62**	**p=0.000, (s)**

***p<0.001, S – Significant

Table IV shows the comparison of pre and post test level of haemoglobin in the experimental group.

The table further reveals that in the experimental group the pre test mean score was 9.17 with SD 0.39 and the post test mean score was 10.71 with SD 0.62.The calculated value't' value was t=19.418 was statistically highly significant at p<0.001 level which clearly indicates that there is significant difference between the pre test and post test level of haemoglobin in the experimental group.

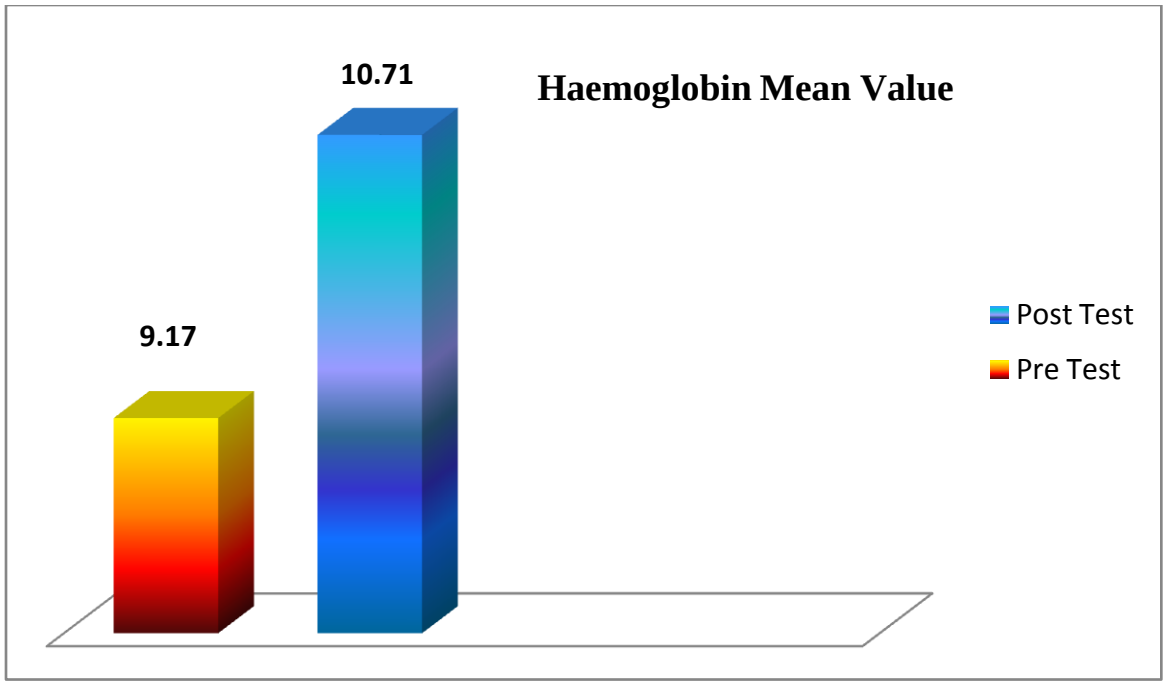

Fig 7: Pretest and posttest haemoglobin mean value for experimental group

Table: V

Comparison of pre test and post test level of hemoglobin score in the control group

n=30

Hemoglobin	Mean	S.D	't' Test
Pretest	**9.25**	**0.32**	**t= -0.745*** p=0.463, (N.S)**
Posttest	**9.29**	**0.36**	

N.S – Not Significant

Table V shows the comparison of pre and post test level of haemoglobin in the control group.

The table further reveals that in the control group the pretest mean score was 9.25 with SD 0.32 and the post test mean was 9.25 with SD 0.36.The calculated value was t=0.745 was not significant at p=0.463level which clearly indicates that there is no significant difference between the pre test and post test level of haemoglobin in the control group.

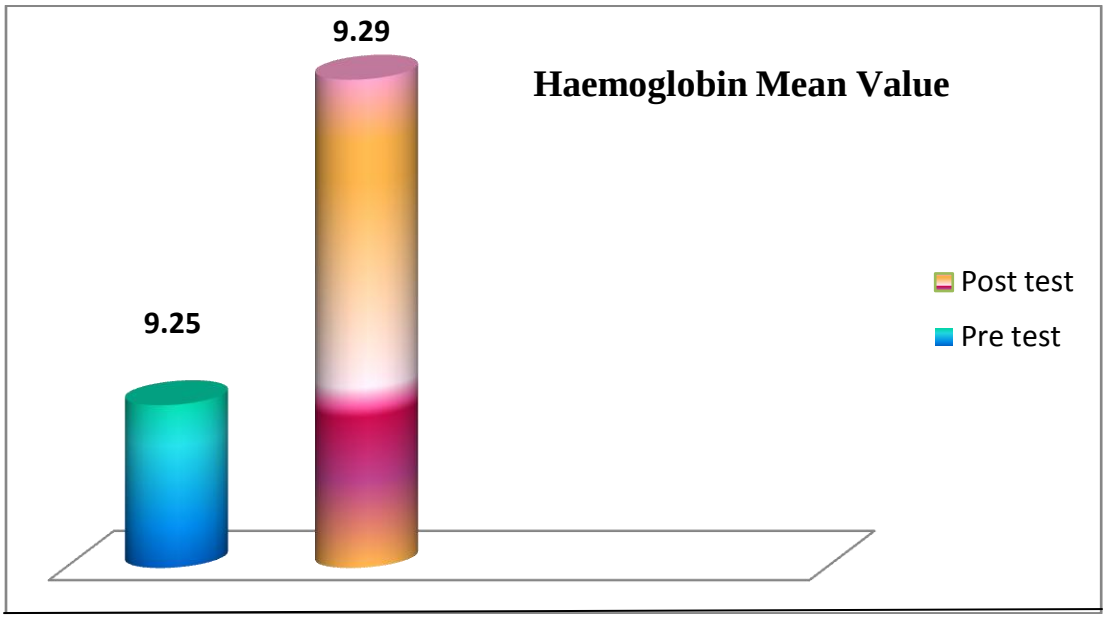

Fig 8: pretest and posttest hemoglobin mean value for control group

SECTION: E

Table: VI

The outcome of gooseberry juice on iron deficiency anemia.

n=60

Hemoglobin	Mean	S.D	't' Test
Experimental Group	**10.71**	**0.62**	**t= 10.890*** **
Control Group	**9.29**	**0.36**	**p=0.000, (s)**

P<0.001,S-significant

The Table VI shows the outcome of gooseberry juice on iron deficiency anemia in the experimental group and control group.

The table further reveals that in the experimental group mean score was 10.71 with SD 0.62. The calculated't' value was t=10.890was found to be statistically highly significant at p=0.001level, which clearly indicates that is the significant difference in the post test level of haemoglobin in the experimental group. Where as in control group mean score was 9.29with SD 0.36.The calculated't' value p=0.000, which indicates that there is no significant difference in the post test level of haemoglobin in the control group.

SECTION: F

Table: VII

Association of post test level of haemoglobin with the demographic variables in the experimental group.

n=30

Demographic Variables	≤Mean		>Mean		Chi-Square Value
	No.	%	No.	%	
Age in years					$\chi^2 = 1.224$ d.f = 2 p = 0.542 N.S
18 – 19	6	20.0	8	26.7	
20 - 21	4	13.3	6	20.0	
22- 23	4	13.3	2	6.7	
Educational Status					$\chi^2 = 3.549$ d.f = 3 p = 0.314 N.S
1st Year B.Sc.	6	20.0	12	40.0	
2nd Year B.Sc.	4	13.3	2	6.7	
3rd Year B.Sc	3	10.0	1	3.3	
4th Year B.Sc	1	3.3	1	3.3	
Type of family					$\chi^2 = 0.201$ d.f = 1 p = 0.654 N.S
Nuclear	9	30.0	9	30.0	
Joint	5	16.7	7	23.3	
Others	-	-	-	-	
Religion					$\chi^2 = 1.205$ d.f = 2 p = 0.547 N.S
Hindu	5	16.7	4	13.3	
Christian	7	23.3	11	36.7	
Muslim	2	6.7	1	3.3	
Others	-	-	-	-	
No. of siblings					$\chi^2 = 1.176$ d.f = 2 p = 0.555 N.S
One	8	26.7	6	20.0	
Two	4	13.3	7	23.3	
Three & More	2	6.7	3	10.0	
Family Monthly Income					$\chi^2 = 2.098$ d.f = 2 p = 0.350 N.S
<3000	2	6.7	6	20.0	
3001 – 5000	2	6.7	2	6.7	
>5000	10	33.3	8	26.7	
Dietary Habit					$\chi^2 = 0.136$ d.f = 1 p = 0.196 **S***
Vegetarian	2	6.7	1	3.3	
Non-vegetarian	12	40.0	15	50.0	

Demographic Variables	≤Mean		>Mean		Chi-Square Value
	No.	%	No.	%	
Menstrual Cycle					$\chi^2 = 0.201$ d.f = 1 p = 0.654 N.S
Regular	9	30.0	9	30.0	
Irregular	5	16.7	7	23.3	
Level of Haemoglobin					$\chi^2 = 0.126$ d.f = 1 p = 0.054 **S****
9.1—11gm/dl	12	40.0	8	26.7	
8.1-9gm/dl	3	10.0	7	23.3	
<8gm/dl	-	-	-	-	

S – Significant N.S – Not Significant

Table VII shows the association of mean difference of iron deficiency anemic adolescent girls with their demographic variables in the experimental group.

The analysis reveals that the demographic variable such as dietary habit and level of haemoglobin had shown significant association with mean difference of iron deficiency anemic adolescent girls in the experimental group. The other variables such as age, educational status, residence, number of siblings, monthly income of family had not shown significant association with mean difference of iron deficiency anemic adolescent girls.

CHAPTER -V

DISCUSSION

This chapter deals with the discussion of the results of the data analysis based on the Objectives of the study and hypothesis.

The statement of the study was, "A Quasi experimental study to assess the outcome of gooseberry juice with honey on level of haemoglobin among adolescent girls aged 18-23years at selected setting, Kakinada 2011-2012".

The Objectives were

1. To assess the pre-test level of haemoglobin among iron deficiency anemic adolescent girls in the experimental and control group.
2. To assess the post-test level of haemoglobin among iron deficiency anemic adolescent girls in the experimental and control group.
3 To compare the post test level of haemoglobin among Iron deficiency anemic adolescent girls in the experimental and control group.
4 To determine the outcome of gooseberry juice with honey on Iron deficiency anemia among experimental group and control group.
5 To associate the mean difference of haemoglobin among Iron deficiency anemic among adolescent girls with their demographic Variables in the experimental group.

According to their age, out of 30 adolescent girls in the experimental group 14(46.67%) of them were in the age group of 18-19 years 10(33.33%) of them were in the age of group of 20-21 years and 6(20.00%) of them were in the age of 22-23 years. It was the same like in the control group.

With regard to the age in the experimental group, majority 14(46.67%Iorn deficiency anemic adolescent girls were in the age group of 18-19 years 10(33.33%) of them were in the age of group of 20-21 years and 6(20.00%) of them were in the age of 22-23 years. Whereas in control group majority. It was the same like in the control group14(46.67%)iron deficiency anemic

adolescent girls were in the age group of 18-19 years 10(33.33%) of them were in the age of group of 20-21 years and 6(20.00%) of them were in the age of 22-23 years.

Regarding the educational status of the adolescent girls, in the experimental group, majority 18(60.00%) has 1st year B.sc Nursing, 6(20%) 2nd year B.sc Nursing, 4(13.33%) had 3rd year B.sc Nursing and 2(6.67%) had 4th year B.sc Nursing. In control group18 (60%)had 2nd year B.sc Nursing, 5(16.67%) had 3rd year B.sc Nursing and 3(10.00%)had 4th year B.sc Nursing.

Considering to type of family, in the experimental group18 (60.00%) belongs to nuclear family, and12 (40.00%) were under joint family, where as in the control group 21(70.00%) belongs to nuclear family and 9(30%) were living in a joint family.

Regarding religion, out of 30 adolescent girls in the experimental group, 9(30.00%) were Hindus, 18(60.00%) were Christians and 3(10.00%) were Muslims. In control group 10(33.33%) were Hindus, 17(56.67%) belongs to Christians and 3 (10.00%) were Muslims.

Regarding siblings in the experimental group majority, 14(46.67%) were no siblings in family, 11 (36.67%) had two siblings and 5(16.67%) had three and more siblings. Where as in control group 15(50.00%) had no other siblings in the family, 12(40.00%) had two siblings and3(10.00%)had three siblings in the family.

Considering the family monthly income in the experimental group, majority 18(60.00%) were with the income of below Rs.3000, 8(26.67%) were with the monthly income of Rs.3000-5000, and 4(13.33%) were with the income of above Rs.5000. In control group, majority18 (60.00%) were the income of above Rs. 5000, 7(23.33%) were with the income of above Rs.3000 and 5(16.67%) were with the income of Rs. 3001-5000.

Regarding the dietary habit in the experimental group, majority, and 27(90%) were non-vegetarian and3 (10%) were vegetarian. Where as in control group, majority, 28(93%) were belongs to non-vegetarian and 2(6.67%) were vegetarian.

Considering the menstrual history, in the experimental group, majority, 18(60.00%) were regular menstrual cycle and 12(40.00%)were irregular menstrual cycle. In control group, 16(53.33%) were regular menstrual cycle and 14(46.67%) were irregular menstrual cycle.

Regarding the level of haemoglobin in the experimental group, majority 22(73.33%) were range between 9.1-11gm/dl, 8(26.67%) were 8.1-9gm/dl and none of the subjects were <8gm/dl. In control group, 26(86.67%) were range between 9.1-11gmdl, 4(13.33%) were 8.1-9gm/dl and none of the subjects were<8gm/dl.

The first objective was to assess the pretest level of haemoglobin among Iron deficiency anemic adolescent girls in the experimental group and control group.

Considering the experimental group, in the pre test majority 22(73.33%) comes under mild iron deficiency anemia, 8(26.67%) comes under moderate iron deficiency anemia and none of the subjects had severe iron deficiency anemia.

Where as in the control group, in the pre test majority 26(67%) %) comes under mild iron deficiency anemia, 4(13.33%) comes under moderate iron deficiency anemia and none of the subjects had severe iron deficiency anemia.

The Second objective was to assess the post test level of haemoglobin among Iron deficiency anemic adolescent girls in the experimental group and control group.

Considering the experimental group, in the post test all 30(100%) comes under mild iron deficiency anemia and none of the subjects were moderate and severe iron deficiency anemia.

Whereas the control group, in the post test level of haemoglobin 24(80%) comes under mild iron deficiency anemia, and 6(20%) comes under moderate iron deficiency anemia and none of the subjects were severe iron deficiency anemia.

The third objective was to compare the post test level of haemoglobin among Iron deficiency anemic adolescent girls in the experimental and control group.

In the experimental group the pre test mean score was 9.17 with SD 0.39 and the post test mean score was 10.71 with SD 0.62.The calculated value‘t’ value was t=19.418 was Statistically highly significant at p<0.001level which clearly indicates that there is significant difference between the pre test and post test level of haemoglobin in the experimental group.

In the control group the pretest mean score was9.25 with SD 0.32 and the post test mean was 9.25 with SD 0.36.The calculated value was t=0.745 was not significant at p=0.463level which clearly indicates that there is no significant difference between the pre test and post test level of haemoglobin in the control group. Thus, Gooseberry has an effect on iron deficiency anemia; it should be included in the daily diet thereafter. Thus the hypothesis H_1 stated that “there is a significant difference between pre and post test level of haemoglobin among adolescent girls with iron deficiency anemia in the experimental group” was accepted.

The Study findings were consistent with the study conducted by Pereira et al (2007), in which compared iron tablet those who received gooseberry with their daily diet, anemia prevalence rate was reduced from 58.1% to 17.7%(p<0.001)

The fourth objective was to determine the outcome of gooseberry juice with honey on level of haemoglobin between the experimental and control group.

Considering the experimental group mean score was 10.71 with SD 0.62. The calculated t’ value was t=10.890was found to be statistically highly significant at p=0.001level, which clearly indicates that the significant difference in the post test level of haemoglobin in the experimental group.

Where as in control group mean score was 9.29with SD 0.36. The calculated‘t’ value p=0.000, which indicates that there is no significant difference in the post test level of haemoglobin in the control group.

The study findings were consistent with the study conducted by Gopaldas (2002), proved that the daily intake of gooseberry juice decreased in iron deficiency anemia than those who received regular diet and IEC related to prevention iron deficiency anemia.

The fifth objective was to associate the mean difference of haemoglobin among Iron deficiency anemic among adolescent girls with their demographic Variables in the experimental group.

The associations table reveals that the demographic variables age, education status, residence, religion, number of siblings, family monthly income and menstrual cycle not associated with the mean difference of the iron deficiency anemic adolescent girls The demographic variables dietary habit and level of haemoglobin had statistically significant association with the mean difference of iron deficiency anemic adolescent girls. Verma et al also quoted that compared to non-vegetarian (38%), more vegetarian (65.9%) were anemic in his study findings.

The hypothesis H_2 stated that "there is a significant association of mean differenced on haemoglobin with the selected demographic variables in the experimental group" was accepted.

The conceptual framework of this study was based on Roy's Adoption model (1998) clinical nursing theory was modified according to the input, throughput and output among iron deficiency anemic adolescent girls. The investigator found that this was suitable frame work, which was helpful throughout the study. The pre assessment was done after which the intervention, gooseberry juice with honey was given and after which post assessment was done. The study showed that the adolescent girls needed help in increasing their level of haemoglobin by dietary management.

CHAPTER –VI

SUMMARY, NURSING IMPLICATIONS, RECOMMENDATIONS AND LIMITATIONS

This chapter represents the summary, implications, recommendations and limitations based on the objectives of the study.

SUMMARY

Anemia is a condition of the body in which the haemoglobin level falls below normal level. Anemia is a common problem disturbing individuals, especially women. In India, six out of ten women are anemic. This occurs because of lack of basic raw materials for the formation of haemoglobin and Red Blood Cells (RBC). Those basic raw materials are iron, proteins, vitamins (VitaminB12 in particular) and folic acid. Lack of iron and VitaminB12 and other vital minerals cause anemia.

In India the existing prevalence studies were carried out mostly in northern states. Agarwal had documented that the prevalence of anemia was 46% in premenarcheal girls as compared to 48% in post menarcheal girls in the. In rural India a survey was conducted among 13 to 19 years old girls & found out anemia prevalence rate of 83% among girls in school & 93% among girls not in school.

Gooseberry juice contains high amounts of Vitamin C (ascorbic acid), Nicotinic Acid, Vitamin B-1, Iron, and Calcium -- gooseberry juice remains a popular tonic consumed across the globe. 81.2% of gooseberry fruit is water, thus it is a very good source of skin moisturizing, providing effective beauty remedies. Furthermore 8.3% of it is Glucose. The juice has also got adequate amounts of Fibers, Carbohydrates and Proteins.

Vitamin C protects cells against free radicals and strengthens blood vessels walls and Calcium helps to prevent the narrowing of the blood vessels resulting from contraction of the

muscular wall of the vessels. Gooseberry contains vitamin C and Iron which helps to prevent the anemia.

The statement of the problem was, A Quasi experimental study to assess the outcome of gooseberry juice with honey on the level of haemoglobin among iron-deficiency anemic adolescent girls aged 18-23 years at a selected setting, Kakinada, 2011-2012.

The objectives were

1. To assess the pre-test level of haemoglobin among iron deficiency anemic adolescent girls in the experimental and control group.
2. To assess the post-test level of haemoglobin among iron deficiency anemic adolescent girls in the experimental and control group.
3. To compare the post test level of haemoglobin among Iron deficiency anemic adolescent girls in the experimental and control group.
4. To determine the outcome of gooseberry juice with honey on Iron deficiency anemia among experimental group and control group.
5. To associate the mean difference of haemoglobin among Iron deficiency anemic among adolescent girls with their demographic Variables in the experimental group.

The Research hypotheses formulated was,

1. H_1- There is a significant difference between pre-test and post-test level of haemoglobin in control group and experimental group.
2. H_2- There is a significant association of mean differed haemoglobin level with their demographic variable in the experimental group.

Review of literature was collected from various sources like nursing journals, complementary alternative medicine library, unpublished thesis, med line database and pubmed. A literature review is a summary of gathered sources, which provides a basis for the investigator to continue her study.

The conceptual framework for the study was based on Roy's Adoption Model and provided a comprehensive framework for achieving the objectives of the study.

The study was conducted at Sriram College of Nursing, Kakinada. A Quasi experimental research design was adopted to assess the effectiveness of gooseberry juice with honey on the level of haemoglobin among Iron deficiency anemic adolescent girls.

Non–Probability purposive sampling technique was used to select the research subjects. The investigator selected 60 samples who fulfilled the inclusion criteria. The researcher provided 30ml of gooseberry juice with honey to iron deficiency anemic adolescent girls per head per day at once at before meal consequently for 30 days. Post test level of the haemoglobin was done using sahli hemometer test after 30 days. The tool also consisted of demographic variables.

Analysis revealed the following

With regard to the age in the experimental group, majority 14(46.67%) iron deficiency anemic adolescent girls were in the age group of 18-19 years 10(33.33%) of them were in the age of group of 20-21 years and 6(20.00%) of them were in the age of 22-23 years. Where as in control group majority It was the same like in the control group14(46.67%)iron deficiency anemic adolescent girls were in the age group of 18-19 years 10(33.33%) of them were in the age of group of 20-21 years and 6(20.00%) of them were in the age of 22-23 years.

Regarding the education status of the adolescent girls, in the experimental group; majority had 18(60.00%) 1st year B.sc Nursing, 6(20.00%) B.sc Nursing, 4(13.33%) had 3rd year B.sc Nursing and 2(6.67%) had 4th year B.sc Nursing. In control group 18(60.00%) had 1st B.sc Nursing, 4(13.33%) had 2nd year B.sc Nursing, 5(16.67%) had 3rd year B.sc Nursing and 3 (10.00%) had 4th year B.sc Nursing.

Considering to type of family, in the experimental group18 (60.00%) belongs to nuclear family, and 12(40.00%) were under joint family, where as in the control group 21(70.00%) belongs to nuclear family and 9(30%) were living in a joint family.

Regarding religion, out of 30 adolescent girls in the experimental group, 9(30.00%) were Hindus, 18(60.00%) were Christians and 3(10.00%) were Muslims. In control group 10(33.33%) were Hindus, 17(56.67%) belongs to Christians and 3 (10.00%) were Muslims.

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Considering the family monthly income in the experimental group, majority 18(60.00%) were with the income of below Rs.3000, 8(26.67%) were with the monthly income of Rs.3000-5000, and 4(13.33%) were with the income of above Rs.5000. In control group, majority18 (60.00%) were the income of above Rs. 5000, 7(23.33%) were with the income of above Rs.3000 and 5(16.67%) were with the income of Rs. 3001-5000.

Regarding the dietary habit in the experimental group, majority 27(90%) were non-vegetarian and3 (10%) were vegetarian. Where as in control group, majority 28(93%) were belongs to non-vegetarian and 2(6.67%) were vegetarian.

Considering the menstrual history, in the experimental group, majority 18(60.00%) were regular menstrual cycle and 12(40.00%) were irregular menstrual cycle. In control group, 16(53.33%) were regular menstrual cycle and 14(46.67%) were irregular menstrual cycle.

Regarding the level of haemoglobin in the experimental group, majority 22(73.33%) were mild level of haemoglobin and 8(26.67%) were moderate level of haemoglobin. In control group, 26(86.67%) were mild level of haemoglobin and 4(13.33%) were moderate level of haemoglobin.

Frequency and percentage distribution of pre and post test level of haemoglobin among iron deficiency anemic adolescent girls in the experimental group reveals that in the pre test 22(73.33%)come under mild iron deficiency anemia, 8(26.67%) come under moderate iron

deficiency anemia and none of subject were severe iron deficiency anemia. In post test 30(100%) come under mild iron deficiency anemia and none of subject were moderate and severe iron deficiency anemia.

Frequency and percentage distribution of pre and post test level of haemoglobin among iron deficiency anemic adolescent girls in the control group reveals that in the pre test 26(86.67%) come under mild iron deficiency anemia, 4(13.33%) come under moderate iron deficiency anemia and none of subject were under severe iron deficiency anemia. In post test 24(80%) come under mild iron deficiency anemia, 6(20%) come under mild iron deficiency anemia and none of them come under severe iron deficiency anemia.

In the experimental group the pre test mean score was 9.17 with SD 0.39 and the post test mean score was 10.71 with SD 0.62.The calculated value‘t’ value was t=19.418 was statistically highly significant at p<0.001level which clearly indicates that there is significant difference between the pre test and post test level of haemoglobin in the experimental group.

In the control group the pretest mean score was 9.25 with SD 0.32 and the post test mean was 9.25 with SD 0.36.The calculated value was t=0.745 was not significant at p=0.463level which clearly indicates that there is no significant difference between the pre test and post test level of haemoglobin in the control group.

The association table reveals that the demographic variables age, education, residence, religion, number of siblings, family monthly income and menstrual cycle were not associated with mean difference of the iron deficiency anemic adolescent girls. The demographic variables dietary habit and level of haemoglobin had statistically significant association with the mean difference of iron deficiency anemic adolescent girls.

NURSING IMPLICATIONS

The investigator has derived from the study the following implications, which are of vital concern in the field of nursing practice, nursing administration, nursing research and nursing education.

NURSING PRACTICE

The nurses have to health educate in reducing iron deficiency anemia as it increases the risk of anemia of chronic disease, as an independent nursing intervention. This can be facilitated by motivating the nurses.

1. The community health nurse should conduct health programme in various health sector regarding the adolescent health.
2. The community health nurse has to develop ability to conduct camp on adolescent health regarding the prevention of anemia.
3. The community health nurse must be encouraged to distribute iron and folic acid in all schools.
4. The community health nurse must visit the college where the prevalence of anemia is evident and they need to teach the anemic patients about the benefits of taking gooseberry in reduction of anemia.

NURSING EDUCATION

The community health nurse as an educator should incorporate various system of medicine and include in the revised curriculum of nursing profession. The nurse educator can include dietary management as a means of non-pharmacological therapy. Its effect in health and illness which can be adopted by the students and the nursing personnel too.

1. The holistic care approach should be emphasized more during the training period of nursing students.

2. The student nurses should have greater involvement in the current workshop, seminar and symposium related to dietary management of increased level of haemoglobin, which is being organized by the same, or any other institution.
3. Provide exposure to various alternative therapies and encourage them to participate, specialize and expand their career.
4. Educators should develop community health nurses to be a good nurse advocate in encouraging the client to choose the best system of medicine.
5. Educators should encourage the nursing students to know about the measures which reduce the iron deficiency anemia among adolescent girls.

NURSING ADMINISTRATION

1. Provide exposure to various alternative therapies and encourage the students to participate in the specialization and expand their carrier.
2. Educators can encourage the nurse to bring out innovative and creative ideas pertaining to effective management of anemia.
3. Educators can encourage the students for the effective utilization of Evidence based practice on dietary management of anemia.

NURSING RESEARCH

1. Conducting various experimental researches nurses can develop knowledge and skill in constructing theoretical framework in nursing profession.
2. More researches can be performed in order to establish the benefits of dietary management of iron deficiency anemia.
3. The findings should be disseminated through conference, seminars, publication in journals and World Wide Web.
4. As evident from the review of literature, more research needs to be conducted on this discipline.

RECOMMENDATIONS

Nursing research is not an end in itself; it arises from the end to newer researches. The study recommends the following research

1. A longitudinal study can be conducted in assessing the prevalence of iron deficiency of anemia.
2. A descriptive study can be conducted on the impact of low level of haemoglobin and the burden of life of anemic adolescent girls.
3. Similar study can be conducted with the large sample for better generalization.
4. A comparative study can be done involving the pharmacological and non-pharmacological methods of treatment.
5. Suggested hostel administrator to maintain the gooseberry administration in practice.

LIMITATIONS

The review of literature contains very few Indian studies related to effectiveness of gooseberry juice on the level of haemoglobin.

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www.ayurvedaherbalmedicine.com

APPENDIX- A
LIST OF EXPERTS FOR CONTENT VALIDITY

MEDICAL OFFICER

1. **Jalaja.S,**
   M.B.B.S., D.P.H.,
   Kolathur, Chennai.

NURSING EXPERTS

2. **Celina**,
   R.N., R.M., M.sc (N).,
   Vice Principal,
   Community Health Nursing,
   Omayal Achi College of Nursing,
   Avadi, Chennai -62.

3. **Lakshmi,**
   R.N., R.M.,M.sc (N).,
   Community Health Nursing,
   Chettinad College of Nursing,
   Padur Kanchipuram Dist,
   Pincode – 603103.

4. **P. Annie Elizabeth,**
   R.N., R.M., M.sc (N).,
   Reader,
   Community Health Nursing,
   M.S A.J College of Nursing.
   Chennai.

5. **Manonmani,**
   R.N.,R.M.,M.sc(N).,
   Community Health Nursing,
   Omayal Achi College of Nursing,
   Avadi, Chennai-62

DIETICIAN

6. **Murali Krishnan**
   Dietician,
   M.R Hospital
   Aminjikarai, Chennai.

APPENDIX- A

LETTER SEEKING EXPERT OPINION FOR CONTENT VALIDITY

From,

Sr.Anniamma K,
M.Sc (Nursing), IInd year,
Vel.R.S.Medical College - College of Nursing,
Avadi,
Chennai-62.

To,

Respected Sir/Madam,

SUB: Requisition for expert opinion on suggestion for content validity of the tool.

I am Sr.Anniamma K, a student of M .Sc (Nursing) IInd year at Vel. R.S Medical College - College of Nursing, Avadi,Chennai-62 affiliated to Dr. M.G.R. Medical University, Chennai.

As a partial fulfillment of the requirement in M.Sc .Nursing programme, I have to complete a dissertation. The topic I have selected is "**A Quasi experimental study to assess the outcome of gooseberry juice with honey on the level of haemoglobin among iron deficiency anemic among adolescent girls aged (18 -23 years) at selected college, Kakinada".**

Herewith I am sending the developed tool for content validity and for your expert opinion and valuable suggestions.

Thanking you,

Yours sincerely,
Sr.Anniamma K.

CERTIFICATE FOR CONTENT VALIDITY

This is to certify that the tools developed by Sr.Anniamma K M.Sc, Nursing Student Vel. R.S. Medical College – College of Nursing, Chennai on the topic "**A Quasi experimental study to assess the outcome of gooseberry juice with honey on the level of haemoglobin among iron deficiency anemic among adolescent girls aged (18 -23 years) at selected college, Kakinada"** is validated by the undersigned and she can process with this tools to conduct the main study.

Place: Chennai Signature

Date:

CERTIFICATE FOR CONTENT VALIDITY

This is to certify that the tools developed by **Sr.Anniamma**, M.Sc. Nursing, IInd year student,Vel.R.S. Medical College - College of Nursing, Chennai on the topic "**A quasi experimental study to assess the effectiveness of goose berry juice with honey on iron deficiency anemia among girls aged 17-25years at selected college, Kakinada 2011-2012,"** is validated by the undersigned and she can proceed with this tool to conduct the main study.

SIGNATURE

MEDICAL OFFICER
KOLATHUR HEALTH POST
CORPORATION OF CHENNAI

Place: chennai

Date: 7/6/11

CERTIFICATE FOR CONTENT VALIDITY

This is to certify that the tools developed by Sr. Anniamma K M.Sc Nursing Student Vel R.S Medical College –College of Nursing, Avadi Chennai-62 on topic **"An quasi experimental study to evaluate the effectiveness of gooseberry juice with Honey on iron deficiency anemia among girls age (17-25 years) at selected college, Kakinada 2011-2012"**is validate by the under designed and she can process with his tools to conduct the main study .

Place: Celambaram

Date: 28/6/11

Signature

28/6/11

PRINCIPAL
CHETTINAD COLLEGE OF NURSING
PADUR KANCHIPURAM DT.
PINCODE : 603 103

CERTIFICATE FOR CONTENT VALIDITY

This is to certify that the tools developed by Sr. Anniamma K M.Sc Nursing Student Vel R.S Medical College –College of Nursing, Avadi Chennai-62 on topic **"An quasi experimental study to evaluate the effectiveness of gooseberry juice with Honey on iron deficiency anemia among girls age (17-25 years) at selected college, Kakinada 2011-2012"**is validate by the under designed and she can process with his tools to conduct the main study **.**

Place: Chennai,

Date: 3.6.2011.

P. Annie Elizabeth

Signature

P. ANNIE ELIZABETH

Reader.

M.S.A.J. COLLEGE OF NURSING
180, Thambu Chetty Street,
CHENNAI-600 001.

CERTIFICATE FOR CONTENT VALIDITY

This is to certify that the tools developed by the Annaiamma K M.sc Nursing Student Vel R.S Medical College – college of Nursing.Avadi Chennai-62 on topic "**A quasi experimental study to evaluate the effectiveness of gooseberry juice with Honey on iron deficiency anemia among girls age 17 -25 year at selected college, Kakinada 2011-2012**" is validated by the under designed and she can process with her tools to conduct the main study.

Place: Chennai

Date: 07/06/2011

Signature

OMAYAL ACHI COLLEGE OF NURSING
King Cross Road,
S. M. Nagar,
CHENNAI-600 062.

APPENDIX – C

INTRODUCTION

Good Morning!

I am Sr.Anniamma K II year M.Sc Nursing student of Vel R.S Medical College – College of Nursing, Avadi, Chennai, I am conducting a study to assess the outcome of gooseberry juice with honey on the level of haemoglobin among iron deficiency anemic adolescent girls aged (18 -23 years)in Sriram College of Nursing, Kakinada. The interventions which are being performed on you will not harm you and I request you to participate in the study. In between if you want to withdraw from the study you have full rights to do that. All your reports will be kept confidential. I request you to kindly give your full co-operation and willingness.

Thanking You

Place: Signature

Date:

CONSENT FOR PARTICIPATING IN THE STUDY

I hereby consent to participate in the study title **"A Quasi experimental study to assess the outcome of the gooseberry juice with honey on the level of haemoglobin among iron deficiency anemic adolescent girls aged 18 -23 years at a selected setting, Kakinada",** with the clear conscience and free will. I have been clearly explained about the purpose and the benefits of anonymity and freedom to withdraw at any point of the study period.

Thus I hereby consent to participate in the study.

DESCRIPTION OF THE TOOL

SECTION A

DEMOGRAPHICVARIABLES

1. Age in Years ( )
   a. 18-19
   b. 20-21
   c. 22-23

2. Educational Status ( )
   a. 1st Year B.Sc.
   b. 2nd Year B.Sc.
   c. 3rd Year B.Sc.
   d. 4th Year B.Sc.

3. Type of family ( )
   a. Nuclear
   b. Joint
   c. Others

4. Religion ( )
   a. Hindu
   b. Christian
   c. Muslim
   d. Others

5. No of Siblings ( )
   a. One
   b. Two
   c. Three & More

6. Family monthly income ( )
   a. <3000
   b. 3001 – 5000
   c. >5000

7. Dietary habit ( )
   a. Vegetarian
   b. Non-Vegetarian

8. Menstrual Cycle ( )
   a. Regular
   b. Irregular

9. Haemoglobin Level ( )
   a. 9.1 to 11gm/dl
   b. 8.1 to 9gm/dl
   c. <8gm/dl

SECTION –B

Biophysiological measurement of haemoglobin by using shali hemo meter.

Normal Value of haemoglobin level

Adolescent Girls (18-23 years) :- 12 -15 gms/dl

முகவுரை

அனைவருக்கும் வணக்கம்.

என் பெயர் சிஸ்டர் அனியம்மா.கே. நான் வேல் ஆர் எஸ் மருத்துவக்கல்லூரி-செவிலியர் கல்லூரியில் இரண்டாம் ஆண்டு முது நிலை பட்டபடிப்பை பயில்கிறேன். என்னுடைய பட்ட படிப்பில் ஆய்வு மேற்கொள்ள வேண்டியுள்ளதால்.பருவ வயது பெண்கள் மத்தியில் "இரும்புச்சத்து குறைபாடு இரத்த சோகை உள்ள பருவ வயது பெண்கள் மத்தியில் ஹீமோகுளோபின் அளவை தேனுடன் கலந்த நெல்லிக்காய் சாறு செயல்திறனை மதிப்பீடு செய்வதற்கான" ஆய்வினை நடத்த உள்ளேன். எனவே நான் நடத்தவிருக்கும் இந்த ஆய்விற்கு தாங்கள் ஒத்துழைப்பு தருமாறு கேட்டுக்கொள்கிறேன்.

ஆய்விற்கான ஒப்புமை

நான் என்னுடைய மனப்பூர்வமான சம்மதத்துடன் கீழ் கொடுக்கப்பட்டுள்ள ஆய்வில் முழுமையாக பங்கேற்கிறேன். "இரும்புச்சத்து குறைபாடு இரத்த சோகை உள்ள பருவ வயது பெண்கள் மத்தியில் ஹீமோகுளோபின் அளவை தேனுடன் கலந்த நெல்லிக்காய் சாறு செயல்திறனை மதிப்பீடு செய்தல்" இந்த சோதனை பற்றிய அனைத்து விவரங்களையும் அறிந்ததுடன் எனக்கு தோன்றிய எல்லாவிதமான சந்தேகங்களுக்கும் சரியான விளக்கத்தைப் பெற்றுக்கொண்டு முழு மனதுடன் எந்த வித வற்புறுத்தலுமின்றி இந்த ஆய்விற்கு பங்கேற்பு அளிக்கிறேன்.இந்த ஆய்வில் பெறப்படும் என்னுடைய விவரங்கள் அனைத்தும் நம்பகமான முறையில் பாதுகாக்கப்படும் என்றும்,எந்த நேரத்திலும் இந்த ஆய்வில் இருந்து விடுபட எனக்கு முழு சுதந்திரம் வழங்கப்பட்டுள்ளது.எனவே இந்த ஆய்விற்கு என்னுடைய முழுமையான சம்மதத்தை தெரிவிக்கிறேன்.

தனி நபர் விரவம்

1.வயது

அ. 18 - 19
ஆ. 20 - 21
இ. 22 - 23

2. படிப்பு நிலை

அ. முதலாம் ஆண்டு பி.எஸ்.சி செவிலியர்
ஆ. இரண்டாம் ஆண்டு பி.எஸ்.சி செவிலியர்
இ. மூன்றாம் ஆண்டு பி.எஸ்.சி செவிலியர்
ஈ. நான்காம் ஆண்டு பி.எஸ்.சி செவிலியர்

3. குடும்ப வகை

அ. தனிக்குடும்பம்
ஆ. கூட்டுக்குடும்பம்
இ. வேறு ஏதேனும்

4. மதம்

அ. இந்து
ஆ. கிறிஸ்துவர்
இ. முஸ்லீம்
ஈ. வேறு ஏதேனும்

5. உடன் பிறந்தவர்கள் எண்ணிக்கை

அ. ஒன்று
ஆ. இரண்டு
இ. மூன்று அல்லது அதற்கு மேல்

6. குடும்பத்தின் மாத வருமானம்

அ. <ரூ3000 க்கு கிழ்
ஆ. ரூ3001 - 5000
இ. > ரூ5000 க்கு மேல்

7. உணவு பழக்க முறை

அ. சைவம்
ஆ. அசைவம்

8. மாதவிடாய் சுழற்சி

அ. வழக்கமான முறை
ஆ. ஒழுங்கற்ற முறை

9. ஹீமோகுளோபின் அளவு
அ. ஹீமோகுளோபின் அளவு 9.1 - 11 கிராம்/டிஎல் மிருதுவாக உள்ளது
ஆ. ஹீமோகுளோபின் அளவு 8.1 – 9 கிராம்/டிஎல் சராசரியாக உள்ளது
இ. ஹீமோகுளோபின் அளவு 8 கிராம்/டிஎல் விட குறைவாக உள்ளது

APPENDIX- D

VEL R.S. Medical College
(College of Nursing)
Owned by R.S. Trust
(Approved by Govt. of Tamil Nadu,
Indian Nursing Council, New Delhi, Tamil Nadu Nurses & Midwives Council &
Affliated to The Tamil Nadu Dr. M.G.R. Medical University)
No. 42, Avadi - Alamathi Road,
Vellanur (Post), Avadi, Chennai - 600 062
Phone : 044 - 26840605, E-mail : vrsmc_con@yahoo.com

Administrative Office:
"Santi Sudha", # 38 (Old No. 24),
ABM Avenue, (Opp. Park Sheraton Hotel),
Chennai - 600 028. India.
Phone off : 24355648, 24334845, 24335828
Residence : 24344708
Fax : 24340386, 24357591
Grams : VELGROUP CHENNAI - 28
E-mail : veltech@md3.vsnl.net.in
Website : WWW.vel-tech.org
Phone : 26841093 Fax : 26841601

13/01/2011

To

The head of the institution,
Sriram College of Nursing (Hostel)
Kakinada.

Sub: Seeking permission for conducting main and pilot study-reg.

Respected Sir/ Madam,

This is to introduce Sis. Anniamma.K, Master Degree Nursing student of this college. She has selected the following topic for the Research study to be submitted to the T.N Dr. M.G.R Medical University as partial fulfillment of the master degree in nursing program.

The topic for the study is "Effectiveness of Gooseberry juice with honey on iron – deficiency anemia among early adults".

She is interested in conducting Main Study & Pilot study at your estimated institution.

I assure you that our student will abide by the rules and regulations of the Institution. I request you're at most help in regard to the same.

Thanking you,

Place: Kakinada,
Date 11.04.11.

Prof. Mrs. M. Anuradha
PRINCIPAL

PRINCIPAL
VEL R.S. MEDICAL COLLEGE
(COLLEGE OF NURSING)
42, AVADI-ALAMATHI ROAD
VELLANUR - CHENNAI

PRINCIPAL
SRIRAM COLLEGE OF NURSING
KAKINADA

CERTIFICATE OF ENGLISH EDITING

TO WHOMSOEVER MAY CONCERN

This is to certify that the dissertation prepared by Sr.Anniamma K, II year, M.sc. (Nursing) Student of Vel. R.S. Medical college, college of Nursing, Avadi, Chennai, for her study, "**A Quasi experimental study to assess the outcome of gooseberry juice with honey on the level of haemoglobin among iron deficiency anemic among adolescent girls aged (18 -23 years) at selected college, Kakinada 2011 -2012** "is edited for English language appropriateness by

PLACE: Chennai **NAME:**

DATE:

SIGNATURE:

CERTIFICATE OF ENGLISH EDITING

TO WHOMSOEVER MAY CONCERN

This is to certify that the dissertation prepared by Sr.Anniamma K, II year, M.sc. (Nursing) Student of Vel. R.S. Medical college, college of Nursing, Avadi, Chennai, for her study, **"A Quasi experimental study to assess the effectiveness of gooseberry juice with honey on iron deficiency anemia among girls age(18-23 yrs) at selected college, Kakinada 2011-2012"** is edited for English language appropriateness by

PLACE: Chennai

DATE:

NAME:

SIGNATURE:

M. SREEDHARAN, M.Sc., M.Ed., M.Phil., M.B.A.,
P.G. Asst (Chemistry)
Vijayanta Hr., Sec., School,
HVF Estate, Avadi, Chennai-600 054.

CERTIFICATE OF TAMIL EDITING

TO WHOMSOEVER MAY CONCERN

This is to certify that the Tamil version of tool used for the dissertation work by Sr.Anniamma K, II year, M.sc. (Nursing) Student of Vel. R.S. Medical college, college of Nursing, Avadi, Chennai, for her study, "**A Quasi experimental study to assess the outcome of gooseberry juice with honey on the level of haemoglobin among iron deficiency anemic among adolescent girls aged (18 -23 years) at selected college, Kakinada 2011 -2012"** is edited for Tamil language appropriateness by

PLACE: Chennai **NAME:**

DATE:

SIGNATURE:

CERTIFICATE OF TAMIL EDITING

TO WHOMSOEVER MAY CONCERN

This is to certify that the Tamil version of tool used for the dissertation work by Sr.Anniamma K, II year, M.sc. (Nursing) Student of Vel. R.S. Medical college, college of Nursing, Avadi, Chennai, for her study, **"A Quasi experimental study to assess the effectiveness of gooseberry juice with honey on iron deficiency anemia among girls age(18-23 yrs) at selected college, Kakinada 2011-2012"** is edited for Tamil language appropriateness by

PLACE: Chennai

DATE: 11.1.12.

NAME:

SIGNATURE: 11/1/12

D. AMALA SUJEEVANA M.A., M.Ed.
Headmistress
Avadi Municipal Middle School
Kovilpadagai
Avadi, Chennai-600 062

NO HARM CERTIFICATE

This is to certify that the tools developed by Sis.Anniamma, M.Sc (Nursing) II year student, Vel.R.S.Medical College, College of Nursing, Chennai on the topic," **A quasi experimental Study to assess the effectiveness of gooseberry juice with honey on iron deficiency anemia among girls aged 17-25years at selected college"** is validated by the undersigned and she can proceed with this to conduct the main study.

SIGNATURE

M. R. HOSPITAL
REGD No 244
12 / 20, GOVINDAN STREET,
AYYAVOO NAIDU COLONY
AMINJIKARAI, CHENNAI-600 029
PH: 2363 3313, 2363 3314

Place: Chennai

Date: 29.6.2011